

96 A

Philosophical ESSAY

DECLARING
The probable Causes, whence
Stones are produced in the
Greater World.

From which occasion is taken to search
into the Origin of all Bodies; discovering
them to proceed from Water, and Seeds.

Being a *Prodomus* to a Medicinal Tract con-
cerning the Causes, and Cure of the Stone in
the Kidneys, and Bladders of Men.

WRITTEN

By Dr. Thomas Sherley, Physician in Ordinary
to His MAJESTY.

L O N D O N ,

Printed for William Cademan, at the Pope's Head, in
the Lower Walk of the New Exchange. 1672.



Philological Essays

• DECLARATION

• The bipartite *Enquiry* which
follows was commenced in the
autumn of 1791.

• Every article occasioned by the
consideration of the *Enquiry*, or
any part of it, will be published
as it is composed.

• Every article will be a separate
document, and will be published
as it is composed, and will be published
as it is composed.

• A R I T T E R

• The *Enquiry* will be published
as it is composed, and will be published
as it is composed.

• O M O I

• The *Enquiry* will be published
as it is composed, and will be published
as it is composed.

To the Illustrious
GEORGE

Duke, Marquis, and Earl
of Buckingham; Earl of Co-
ventry, Viscount Villiers,
Baron Whaddon of Whaddon,
Lord Ross of Hamilock, Be-
voir, and Trusbut, &c. Master
of the Horse, Knight of the
most Noble Order of the Gar-
tier, Chancellor of the Univer-
sity of Cambridge, and one of
His Majesties most Honoura-
ble Privy Council.

May it please your Grace,

Is not the sublime
condition in which
you are, nor the

A 2 emi-

The Epistle Dedicatory.

and great Honour with which you deservedly shine, (as a bright Star, of the first Magnitude in our little World,) that hath induced me to address this ensuing Discourse to you; but the great, and excellent knowledge of Natural Beings, your Grace hath acquired by a constant, and curious Anatomizing of all sort of Concretes in your Laboratory; a way certainly the most likely to give you a faithful and solid account of the Nature

The Spanish Dedicatory
time of things, by discov-
ering to you the real prin-
ciples of which they are
constituted. This it is,
which made me conclude,
I should have done a great
injustice, had I put this
Tract under any other
Protection than yours.
And indeed, at whose feet
can a Subject of this Na-
ture be fairly plac'd as at
your Grace's, you being so
great an Experimental
Philosopher?

But lest I prove tedi-
ous, I will conclude this
Epistle, with assuring
A 3 you

The Epistles of **Dedicatory.**

giveth to the English Book
but the Author of it, and
both Dedicated to your
Grace in Service, by him
that in all Humanity sub-
scribes himselfe thine, &
yours in q[ui]c[k]e I bid you
restio **(My Lord,**
yours &c. &c. &c. &c. &c. &c.
to your Honour be shales
to you most Obedient and
of yore & 293. & more
In this **Faithful Servant,**

Richard **SHARPE.**
293. & more
more. & A

TO



TO THE

READER.

READER,

Uffome, which hath the power to make, and establish Laws, hath obliged me to comply in this particular of writing to thee. Otherwise I was resolved to suffer this ensuing Discourse to appear naked, and without an Advocate, [as Philosophical Subjects ought to do;] that so the minds of the Judicious, being free from prepossession, might be the better able to judge of the truth of the Matter in hand, and of the validity of the Arguments I produce to evince it.

This, I say, I would have done, could I have been affir'd, that this Book should have fallen under the censure of none but

To the Reader.

As I have thought my self, hardly to have
performed my labours in any thing but to
such sort of Inquisitors, and the like wise
Men, I pretend not to have done any further
service in these Lucubrations; then by ba-
ding laid together those Arguments, and
Experiments which did readily occur to my
mind, and which I thought might conduce
to prove the Reader in hand, a Subject fit
to be seriously look'd into; and though I seem
in some places to be determinate, yet I de-
clare. [once for all] I have not the vanity
to think I have put such a Nodus upon
the inquiries into this Subject, that no
further discoveries are to be made; and in
less. For though the Subject be not yet
pared, yet it is far from being unprovided.
And if by my endeavours I shall prove
Instrumental, [by giving of hints, &c.]
to put other industrious Philosophers, who
are fitted with better parts, and more time,
to digg deeper in these Quarries, I shall
think it glory sufficient, to have been thus far
serviceable to the Common-wealth of Learn-
ing: and if by the endeavours of such
Worthy Men, I shall find my self con-
firm'd in my Opinion, I shall rely upon it
with the greater security. But if by their
inquiries, other, and truer causes shall
appear;

To the Reader.

whereas I shall now complaine of knowledge, which I will willingly declare to Professe to Truth, shoulde at the same time be dis-
covered to convince me of having been
wrong in my Opinion. against which

But as professe thinking I defend an error, I shall not easily release from my Opinion, without my judgment be convinc'd, by the same means I make use of, to Professe others: that is, both by reason, and Experiments. And likewise let me add this, that I shall expect the same Candor, and civill dealing from such who intend to confute me, which I have shew'd to those whose Opinions I reject. For otherwise I shall conclude a railing Adversary far-
ter for my slight, than reply; I knowing a better use of my time, then to spend it so unfruitfully.

As I count not applause, which is a vanity unbecoming a Philosopher; So, bearing [as I suppose] uppon'd in a good Cause, that is, the defence of a Philosophical truth, [viz. that the Matter of Stones, and all other Bodies, is water, and their Efficient Agent] I shall not fear Censure, though I must be exposed to that of any Man, which shall take the pains to peruse my Book; I am not ignorant of the Troubles, So many Men, so many Minds: Nor of that other,

I. The Author's Reader.

which I have done from Line 111; and
therefore I have not written any history
of Authors, with which you may be
more familiar, and that is their Readers,
which though they may have large
Souls, wherein yet knowledge, Conscient
and shewes of this Nature, & so, that
I cannot satisfactorily know, and that
therefore I have done. I shall
therefore inform them of these things, fol-
lowing, in this short book, concerning
him. [which] will yet sheweth that I am
of these, that there are many Men, of
other Natural parts, which yet want the
advantages of understanding, the Greek,
and Latine Tongues, for whose sake, I
have [that] I might be the more useful.]
Translated into the English, all those
quotations which I make use of, from
Authors which have writ in that Learned
language, and that I am the most
from [Mauritius,] though I have only
done this part. I will to satisfie the
scrupulous learned sort of Readers,
of my integrity, I have almost constantly
given them the very words, and in the
same language, that are delivered by
them, and together with the Book,
and for the most parts Page, where the
will to whom I have given it. One
more

To the Reader
Original workes not found, [marked in
the Margin], in any where and I only

Secondly, If it shall be objected, that I am very frequent in gravetting [a thing much out of fashion]; and that therefore it may be suspected, I have said little but what will be found expressed by others. I shall acknowledge I have written fully before this, because I had a desire to get my self strongly Seconded in my Opinion by the determination of Learned Men: [—And of the Testimony of such being above I made use.]. For I verily believe that if an Angel himself should speak any thing singly, and as his own Opinion, he would not be believed by some Men. But however the Reader will have therfore advantages by it, I first, those things are best contriv'd, and brought under their proper heads, which are dispersed in many Voluminous Authors, which will save him time in searching many Books. Secondly, He may find the Pith, and substance of what others have written in their Languages, digested in his own. And thirdly, here are besides many Experiments, and Observations of things not very conduicible, I suppose, to any cloathes, and

To the Reader

and especially those Philosophical Principles I have undertook so defend in this Discourse.

Thirdly, if any Man shall be so much desirous to begin an exact examination of those I often give to Van Helmont, and Mr. Boyle's Author, and if he had taken the pains to search the depth of these two, as I have done, I would not but he would acknowledge, I have fallen short of giving them their deserved praise, they having merited so much from all ingenuity, and learned Men. I have

Lastly, I think it necessary to tell thee, how I would fain to be understood those two words of Seed, and Water, the Principles upon which I have built this Discourse.

First then, by Seed I understand a fine, subtle substance, [imperceptible by our gross Organs of Senses] in which God hath impressed a Character of whatsoever he will have it produce from the Matter it is to work upon, which it

doth

To the Reader.

doth perform by putting the parts of Matter into such a peculiar motion as is requisite to produce the intended Effect. And this we may illustrate thus.

A Woman with Child, by a strong desire, forms in her Spirits an Idea of some Fruit she longs for; and by the powerfull motion of that Idea working on the Child, she forms a real Essyie of the said Fruit upon that Member of the Child which corresponds to that of her own Body she touched with her hand; which, as Experience teacheth us, will Vegetable, grow Ripe, and wither, according to the several mutations the Fruit it resembles undergoes. And we are told by Eldras, that God, before he made the World, did consider the things he intended to make; and then produced them. By which Expression, I think may well be understood, the Creation of all those Spiritual, and Sensual Beings, containing in them, not only an Idea of the thing to be made; but also a power to move the Matter after a peculiar manner, by which means it reduceth it to a form like it self. And as a Painter doth first conceive in his mind a Spirituall Idea of the Picture he intend-

eth

To the Reader.

He is drawn, and influenced by preceding Motions of his hand, which are guided by the said Idea, he produceth a perfect Picture Corresponding with that in his mind: So likewise, by putting Matter into peculiar Motions, the Seminal Idea makes it self visible.

By Matter, I understand, a Fluid Body, consisting of very minute parts, and variously figure'd Atoms, or Corpuscles, the Mass of it being full of pores, and therefore subject to be contralized into less room: and upon the same account it dieth easily, and readily submit to those motions it is put into by Seminal Beings: from which moving of Matter all the visible, and Tangible Bodies of the world, have their result. And therefore I have all along this ensuing Discourse, took care to explicate the duty of the Origin of Bodies, by the Mechanical Principles: That is, by the Motion, Shape, Size, Situation, and Connexion of the parts of Matter.

But though this be a way commonly used, in expatiating things, by the Philosophers of our Age, yet most of them leave out the first principle of Natural Motions, viz. the Seminal principle, which I have taken in, to compleate my Hypothesis.

And

To the Reader,

My self being in a small Number of Books
say this further, I and let it not be counted
a vanity, I have written this Discourse, I have
in some measure endeavoured to shew out the
truth of those principles I have assumed to
defend.

It hath cost me some pains to Collect, and
draw into proper Sections, the Body of this
Discourse: which I have also strengthened
by the Authority of the best Philosophers,
and Learnedest of Men, both Ancient, and
Modern. All which I have presented the
with a hearty willing obhingement, that
may for the usefulness of mankind receive as
much satisfaction in this Doctrine, as I do,
who am a Friend to all that industriously
sreach after the Truth, and Nature of
things.

THO. SKERLEY.

From my House, in New-ton-
street, over against New-
South-hampton Building, in
High Holborn. Jan. 27th.

1872.

1812-1813 Oct 10
The Committee is desired to
Consider as he reads, where
Errors of the Press, as likewise
with any other he shall
find.

ERRATA

Page 12. in the Margin, leg. Com-
muni-ty, lim. 1. read Concurrit.
p. 13. leg. 1. [dele this word] or inde.]
p. 14. lin. 35. leg. 1. prior. 16. lim. 3.
leg. Springy. p. 35. lin. 12. dele whilst,
and they. p. 16. dele [. p. 38. in the
Margin, leg. Elementis. p. 40. lin. 23.
leg. farces. p. 103. lin. 25. leg. seminal.
p. 126. lin. 26. leg. apposition. p. 134.
lin. 24. leg. αλιθέαν. p. 110. lin. 28.
leg. those. p. 137. lin. 1. leg. least. p.
129. lin. 1. leg. Etherel. p. 114. lin. 1.
leg. [iu.] p. 119. lin. 9. leg. vutton.

die z. auf . und 1511 d. H.

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THE FIRST ESSAY!

Being a Discourse intended to demonstrate, that not only Stones, but all other Bodies, owe their Original to Seeds, and Water.

Section the first.

Having, in compliance with
the importunate desires, or
other commands, of many
of my Worthy, and inge-
nious Friends, obliged my self to ac-
quaint the World with my thoughts
concerning the most probable cause of

B the

ing, and always present him from.

Let us then in the first place examine, how Nature produceth Stones without the Body of Man (this is in the greater) World;) after which we will see, if the cases of germinating Stones in the Bodies of Animals, be not the same, or at least, bear some Analogy, or resemblance thereto. Which that we may the better be enabled to do, I shall relate some choice Histories of Petrifications, taken out of approved Authors, and then examine the causes by which they were performed.

3. Daniel Filipus, mentioned in a River's History 1.

called Ephy, which receives into it self the Torrent of the River Sene, into which, Wood, Herbs, of any other falling thing being cast, it converts into Stones.

4. Abbot Magus relates, that in the Danish Sea, near Lubek, in his time, there was found a Limb of a Tree, with a Nest, and Young Birds in it, the Wood, Nest, and Birds being all converted into Stones.

5. Daniel Filipus tells us (not upon hear-say, but upon his own knowledge) that the Branches of Trees, with their Leaves, being cast into the River of Syra, do turn into stones.

The Origin of Stones; And

4.

D. Lapid.
ex Alberto.
Lib. 1.
Misrol.
Cap. 7.

Marbodius acquaints us, that there is a Fountain in *Ghent* [on *Gastland*] that changeth whatsoever is put into it into stone; and that the Emperor *Frederick*, being incredulous of the thing, did send his Glove thereto, sealed with his Ring; & that that part of the Glove, with the seal, which was immersed in the Water, was in a few dayes converted into stone; the other part remaining Leather.

Johannes Kentmannus concerning

Dr. fossilibus.

Fossils, writes, that Arms of Trees, with the Leaves, Bark, Wood; also Gloves, and divers other things, being cast into a certain Fish-pond, near the Castle of *Schellenberge*, in *Misnia*, are turned into stone.

5.

*Dr. L. de
Baladis.*

Burthomelius à *Clivola* affirms, there is a Lake between *Gafarta*, and *Tunus*, two Cities of *Capadoccia*, into which part of a Reed, or Stick being put, it by degrees is changed into stone, that part which is out of the Water remaining what it was before.

6.

*Lib. 2. de
Lapid.
Gm. cap.
300.*

Anselmus Boethius declarereth, that in *England*, near the River *Dar*, by *West-Chester*, there is a great Cave, into which whatsoever water flows, is turned into stone.

7.

Thomas Morefinus relates, that in

Utriculum.

Moresfinus

Nature of Petrification.

5

Moravia there is a dark Water, in which there doth not at all appear any viscous matter ; which water, nevertheless, coagulates into stone.

II. *Johannes Petrus Faber* giveeth us a History 9.
wonderful account of a Spring in the In Lib.
Suburbs of Claremont, in the County of Hydrogr.
Avernia. It flows [sayes he] out of a Spagy.
Rock, and in its very coming forth it Cap. 14.
produces Rocks, and white stones ; and the Inhabitants of this City, when they would make a Bridge to go over any of the small Rivulets, which are made by this Fountain, that so they may visit their Fields and Gardens, do thus : They cause the Water of this Fountain to glide over certain planks, made Arch-like, and within twenty four hours they have a solid stone Bridge ; by the help of which they can pass dry-foot over the Rivers. The Water of this Fountain is visibly changed into stone, yet nevertheless it always flows as other Springs do : This water is exceeding clear, nor doth it differ in colour, or clearness, from other Springs ; Beasts will drink of it if they be not binded ; but if they do, it coagulates in their stomachs into stone, from whence Death follows, by reason of a Collick caused from thence, which

B 3

kills

The Origin of Bonies, And

kills with cruel torment all the Beasts that have drunk this Water. wherefore the Inhabitants take care to drive their Cattle far enough from this Fountain ; for it is as a present poison to all sorts of living Creatures that drink of it. When it is taken from the Spring, it is quickly turned into stone ; the truth of which the Inhabitants do make manifest [to all that doubt thereof] by many experiments ; they fill a glass with this Water, and presently it is converted into stone, which retaineth the shape of the glass : so likewise if Earthen Vessels be filled with this water, it is suddenly congealed into stone, which keeps the form and figure of the Vessel that contained it. This wonder of Nature [saves he] every body admires, but I believe hardly any body will be found, that shall be able to render the Natural reason of this thing. Thus far he.

10.
In vita
Peireschi.
Lib. 1.

Gaffendus tells us, that Peirescius [according to his usual custom in the Summer] going into a stream of the River Rhosne, to wash himself ; he observed once the ground to be hard under his feet, and uneven, [which had at all times before been soft, and smooth] being full of knobs, and Bales, about the bigness,

and

and likeness of Eggs boyled hard, and the shells pilled off, which he looking upon as somewhat strange, took some of them up, and carried them home; but a few dayes after he was surprised with a greater admiration: for going again into the same place of the River, he found those soft, and yielding lumps, he had left there, turned into perfect pebble stones; and also viewing those he had laid up at home, he found them likewise turned into true Pebbles.

13 **Belmont** likewise affirms, that [contrary to the Proverb, *Quia Cervus Lepidem*; A drop by often falling doth hollow a stone] there is a Spring in the Monastery of *Zetta*, near *Brussels*, that breeds stones so fast, that the Monks are daily forced to break them off with Crooks and Hatchets.

14 And I myself have seen a Spring near *Wrisbam*, in *North-wales*, that in a short space of time, would convert Sticks, Straws, Leaves, Leather, or any other Subject, put into it, into stones. And of this Nature are divers other Springs to be found, both in *Ireland* and *England*.

15 Our Industrious Countrey-man, *George*, assures us, he knew several Springs

1. 1. 1.
1. 1. 1.
1. 1. 1.
1. 1. 1.

11. 1. 1.
De L'Her-
af. cap. 1.

12.

13.

History of
Plants.

Lib. 3.

p. 196.

of this Nature, both in England, and
Wales: As in Bradford-shire, in Warwick-
shire; Inde Normandy; and another
near Knaresborough; in York-shire; the like-
wise telling, he knew divers pieces of
Ground, into which a stone being struck,
that part in the ground would be changed
into stone, the other part remaining
Wood.

14.
In append.

Syn. 15.

Arca.

Chym. cap.

Librius relates, That a certain
Hen sitting on her Eggs, being struck
with a Gorgonick Spirit, was transform-
ed into stone, with her Eggs likewise.

32.

15.
In Prefat.

Lib. de fig-

mat, Rerum.

Grotius relates, that in a certain place
of Moravia there is a stupendious Den,
in which are to be found divers, and ad-
mirable sportive works of Nature: for
the drops distilling from the upper part of
the Cave, into the hollow of it, do there
form many intricate Labyrinths in the
Mountain, and do presently [of their
own accord] convert into stone, by the
help [as he thinks] of the Spirit of Salt;
and in their falling from on high, they
form various Figures, and Statues of
stone.

16.

Arisbe lyses, that in the Metalline
Grots of Lydia, about the City Perga-
mot, certain Workmen in the time of
War, having fled into them to hide them-

themselves; had the mouth of the Cave being stopp'd; they perished there; but afterwards being found, not only their Bones, but their Veins, with the humours contained in them, were found to be turned into stone.

19 Aventinus also writes thus: In the Year 1318, by an Earthquake, more than fifty Country men, with their Milch Cows, and Calves, being killed and stifled by an Earthy saline Spirit [as he supposeth] they were reduced into saline Statues, [such as *Luis* *Vvife*:] And this happened amongst the *Carini* [a People of Germany;] which similitudes or Images of Men, and Beasts, were seen both by him, and the Chancellor of *Austria*.

20 To the like purpose, *Helmont* tells us of a whole Army, consisting of Men, Women, Camels, Horses, Doggs, with their Armour, Weapons, and Waggons, which were all transmuted into stone, and remain so to this day, [a horrible spectacle;] And this, saith he, happened in the Year 1320. betwixt *Russia* and *Tartary*, in the Latitude of 64. degrees, not far from a Fen of *Kataya*, a Village, or Horde, of the *Biscaydians*; which he very rationally con-

17. *In His.*
Brev.
Lub. 7. *id.*
et. in Ausl.
Brev.

18. *De Lithuania*
cap. 1.

concludes to have happened from a strong
sho're purifying breath or ferment, in-
-taking an eruption through some clefts of
the Earth, the Land being stony under-
neath; and the Winds having been silent
for many dayes.

He that desireth more Examples
of this kind, let him consult Georgius
Wernerus, de Hungaricis, Godfrid. Smid.
in lib. Princip. Philosoph. Et Medic. antiqua-
tatis. Cap. 10. F. Leander Albertus in
descript. Italia. Andreas Laurentius, lib.
13. de Frustris. Cap. 2. Georgius Agricola,
lib. 7. de Natura fossil. Cap. 22.
Johannes Vigandus, in libello de Succinito.
Lobelius, in his Observat. Caelius, &c.
But I suppose what I have here related
sufficient; and therefore I think it now
time to inquire into the Causes of Petri-
fication, and the Efficient of these
Transmutations.

SECT.

Section the Second.

22 **T**he Doctrine of the four Elements [with their qualities,] concurring, as is suppos'd, to the production of Bodies, which was introduced by the Authority of Aristotle, and hath since prevailed with most Men even to this Age of ours,] hath been the cause, why we have hitherto received but an unsatisfactory account, not only of the Origine of all concretes, but more particularly concerning stones; and that not only in Relation to the Material Cause, but also to the Efficient, of Petrifications in general.

23 For, they seem to think it sufficient, to have crudely told us, that Stones [and all other Minerals, and Metals] are made of Earth, with a slight mixture of the other three Elements, as the Material; and by the assistance of Heat, Cold, Moisture, and Dryness, as the External, and efficient Cause. For perceiving the weight of Minerals, and Stones, to exceed the weight of water, they therefore assign the matter of Minerals, and

and Stones, to be chiefly Earth; and without any further Controversie, or search after the matter, they are content to believe, and would have us do so too, that all sorts of stones are nothing but Earth, from which the other three Elements are forced by heat; by which means it becomes baked into a stone. And this they [viz. the Aristotelians] think they prove by alludging the Example of Potter's Earth, which being burnt gains a stone-like hardness. And because neither Stones nor Earth do commonly melt in the fire, they therefore conclude stones are made of Earth. But there being no such heat in the Superficies of the Globe, much less in the bottom of the Water [where commonly stones are bred,] I must confess I can receive but little satisfaction from this account.

And I find the Learned Sennertius is as unsatisfied with this Doctrine as my self: for he will by no means allow the Elements, or their qualities, to be the Primary Efficient of Stonification. His words are these; *Licet vulgo multi e qualitatibus primis Calculorum Concretionum & Coagulationum causas deducere conantur; tam men frustre laborant.* Nam neque exsiccatio, nec calor, nec frigus, hic locum habere possunt,

Sennertus, in Lib. con-
bus primis Calculorum Concretionum & Co-
agulationum causas deducere conantur; ta-
men frustre laborant. Nam neque exsiccacio-

Cap. 2. *nibus*

possunt, ut primaria causa, si namvis causa
sunt sine qua non, concurre posse, non nega-
mus: dum scilicet aquam, que concrezionem
obstat, absunt: neque a quodam hunc
nus monstrare posuit, quomodo calor
nudus talem Concrezioni disponitatem qua-
nerare, & succinum Lapidescensem produ-
re possit. Imo sit hoc etiam ut omnis
Calor abest. & ita frigida etiam membra
neisque locis, sicut & in infans, ubi
nullus concedatur Caloris exessus, sed mag-
nifica potius crudelatis malitia depre-
dantur, in vicina generantur Calculi: &
quomodo, quales in fontibus frigidis, in
quibus liqua numerosa in lapides transfor-
mantur, succus lapidescens a calore produci-
tur? Deinde, frigus quod attinet, non sem-
per in loco frigido vel minus calido, Cal-
culi concrescant, cum & in frigido & in
pulmonibus, circa basin arterie magna, in
cordis arteriis, quo in corde reperti sunt:
Illi legimus in Observation. Cornel.
Gemmae, lib. I. Cosmopat. Cap. 6.
Anton. Bonivent. de aliis Morb. &
Sanat. Cap. 24. Cornel. 3. Phys-
iolog. Cap. 12. Hollerii, I. de Morb.
internis, in Schol. Cap. 29. & 50. Et
in balneis etiam Calidissimis Trophos
stirias fangoes concrescere, ubi frigus
nullo modo admitti potest, experientia
compertum

comparative Baber: III English 3

Though it hath been much endeavoured by many, to deduce the causes of the concretion, & coagulation of stones, from the heat, or primary qualities, yet hath their labour been in vain: for neither can dryness, heat, or cold, be here allowed as a primary cause, [but we do not deny, that they may concur as a cause, ~~in anima nostra~~, so that it may, for Example, waste the water, which hindereth concretion;] neither could it hinder to be demonstrated by any body, how heat of it selfe could be able to generate such a disposition of compactation, and that it could produce a Lapidescient juice: Nay, this is performed where all heat is wanting, and that in cold and Membranous places; as also in infants, who are not allowed to have any excess of heat, but are rather found to have manifest crudity; the stone is generated in the Bladder and howl'd parts, in the stonying juice produced in cold fountains, into which wood being cast is changed into stone: Then, as so cold, stones do grow in the Head, in the wings, about the balls of the great artery, in the Arteries of the Heart; nay, they are

“ are in the Heart it self. Also there growe
“ in hot Bathes, in expensives floweres,
“ sandy stones, & stony sickes, where cold
“ can by no means be admittid. Thus far
he : by which you see he is clearly of
opinion, that neither heat, nor cold can
be the primary, or chief cause of Petrifi-
cation, contrary to the Axiom which
Aristotle layes downe to this effect,

26 *Of those bodies which adherr together, & are
and are hard, they are wont to hardnes affect.* religion. *Lit. 4.*
*ed. some by the fervour of heat; some by q. 2.
cold; that drying up their moisture, this
pressing it forth, and so hardning it to hard-*

27 *Let us then inquire what the Chymical
Philosopher's opinion is in this point
(and the rather because it is constantly
affirmed by most of them, that the Art
of Pyrotechny is the only true means of
informing the mind with Truth, and ac-
quainting it with realities; and we shall
find, that they hold Salt to be the princi-
pial of solidity, and the genuine cause of
coagulation, in all bodies; [as also of
stenification]. For, say they, If you
consult experience, all those things that
are compact, or solid, do contain Salt,
and where there is no Salt, there can be
no hardness. And for this reason they
esteem Salt to be the *principia* of*

Soli-

Solidity: which they that deny [say they,] are obliged to find other cause, from which Salts have that aptitude to coagulate themselves, and become solid bodies. *et si ad hoc uoy. 1011. v. 2. ad*

For, it is manifest, that the Salts of Vegetables, as Crystals of Tartar, Sod, also Nitre, Alum, Vitriol, Salt Gemm, & [and divers other of this Nature] do coagulate themselves, not only into hard, but even brittle bodies, in the bosom of the water: and to this end they alledge, that if the Salt be washed from ashes, no heat of fire will make them hard; but if the Salt be left in them [and they be mixt with a little water] the fire will not only quickly make them become hard, but if they be strongly prest with it, turn them into Glafs. *et uad. 1011. v. 2. ad*

Kircherus
is Maud.
Saxey.

The Learned Kircherus is also of this *29*
same opinion with the Chymists, *scilicet*,
that Salt is the cause of Storifying: which
he giveth us this experiment to confirm it: *q. 5. f. 5. ad 1. inquit* *1. quidam, intemperato*
uasa, pellentes resolvens, & aqua perfecta
commixtum, per Manicam Hippocratis,
Coagulat, illa, nil profusus factum, sed
prosternere, evanescere, salum modo, sedimentum
nitulimque, factum, Nitrum, vel Tartarum
rum, aqua perfecta commixtum addidit, &
illar.

illa quecumq; totigerint intra subiectam concham posita, sive frondes, similique, post exiguum temporis curriculum aeri ex- posita, vel in sarcum ejusdem generis con- versum si non totum, saltetem cortice Saxe- vestient. " If [saith he] you reduce any sort of stone into a most subtile powder, and mixing it throughly with water, you strain it through Hippocrates's bagg, therewill nothing of it remain that is stony; nor will it leave any thing of it behind, but a certain sandy sediment; but if you shall add to this, Natre, or Tartar, per- fectly dissolved in water, whatsoever body they shall touch, being placed in the same Dish, whether it be the twiggs of a Vine, or the like, after a little while being exposed to the Air, it will be turned into stone; or at least it will be covered with a stony Crust. And though this opinion be held by Crollius, Hartman, Quercetanus, Severinus, and Sonnerus, [who are but Neoterick, or late Writers] yet is it no new opinion, but hath been asserted by the venerable Ancients, as long agoe as the time of Hermies Tresmegistus, [who is said to have lived in the Age of Joshua] who in his Smaragdine Tables [as they are cal- led] hath left us these words. Salis

Q

e3

The Origin of Bodies; And

est, ut corporibus in Mundum proditur, soliditatem coagulando praefet; Sal enim corpus est, Mercurius Spiritus, Sulphur anima, that is, "Tis from Salt that Bodies are produced in the world; it causeth Coagulation, and Solidity: for Salt is the Body, Mercury the Spirit, and Sulphur the Soul."

This Doctrine, though much more rational than the former, and seeming to be confirmed by experiment, and to be verified by the account our senses give us of it, cannot yet gain my full assent to it, so far as to allow Salt to be the Primary, either Matter, or Efficient of Solidity in bodies, or the cause from whence stones are produced. For it is observable, that Salts are reducible into Liquors, [and do seem to lose their solidity] either by being mixed with water; or exposed to the Air, in which many of them run *per deliquium*. But, to let this pass; what Salt can be supposed to be communicated to Quick-silver, when it is coagulated by the fumes of melted Lead, by which it becomes so solid, that it may be cast into Moulds, and Images formed of it; and when cold, is not only hard, but somewhat brittle, like *Regulus* of Antimony? What access of Salt

Salt can be fancied is added to the white of an Egg, [from whence the whole Chick is formed] which is a Liquor so near water, that by beating it with a whisk it is reduced into so fluid a substance, that it will easily mix with water, and is hardly distinguishable from it. And yet this white of the Egg, by the assistance of a gentle heat, to stir up its seminal Principle, and enable it to turn, and new shuffle the parts of that liquid substance, [by the means of which motion divers of its parts are broken into shapes and sizes fit to adhere one to another] is all of it turned into solid bodies, some of them very tough, as the Membranes, and Nerves; and some of them hard and brittle, as the Beak, Bones, Claws, &c. [of the Chick;] and all this without any new addition of salt.

'Tis likewise remarkable, that very credible witnesses assure us, that Corral [though it grow in salt water, at the bottom of the Sea] is yet, whilst it remains there, soft, like other Plants, [and juicy also:] neither will the example of *Kircherus*, alledged above, avail much; since it is commonly known, that the powder of Plaster of *Paris*, or burnt Alabaster, if it be mixed with

Gaffendus;
Lib. 4.
Anno Dom.
1624.
Mr. Bayl.
Essay of
crimeneff.

water, without any sort of salt, will coagulate into an entire stony lump, or Mass.

I do not deny but that salt may very much conduce towards the coagulation of some bodies, as we see in the curdling of Milk with Runnet, Spirit of salt, Oyl of Vitrial, juice of Limmons, and the like; but then this happens but to some bodies, and is caused from the shape and motion of its small parts, which entring the pores of some bodies that are naturally fitted to be wrought upon by it, it fills up many of the cavities of such bodies; and also affixing it self to the particles of them, it causeth them, not only to stick to it self, but also adhere closely one to another.

I say, salts do this to some bodies [not to all,] for to some other bodies, instead of being an Instrument, either to cause, or confirm their solidity, it by dissociating the parts, of which they consist, and putting them into motion, doth reduce them into the appearance of Liquor; as we see in the action of corrosive saline spirits, both upon Metals, and Stones.

Now, for that Argument, that salts do shoot even in the water into hard, and brittle

Brittle Crystals, if I should say they do so upon the account of a seminal Principle, I should not, perhaps, be thought to have much mistaken the cause, by those that have well consider'd the curious and regular Figures [yet constantly distinctly distinct from each other,] which their Crystals shoot into: which certainly cannot proceed from chance; for they do as constantly keep their own figure [as for Example, that of Nitre always appears in a Sexangular form, that of Seafall in a Cubical:] As Wheat produceth Wheat, and the seed of a Man, a Man.

35 Philosophers hold, there are two sorts of Agents; one they stile *αἴτιον*, that is, the principal cause, or Agent, from which immediately, and primarily, the Action depends, and by whose powet the thing is made; and this [as we shall prove in its due place] is an Architec~~to~~nick Stonifying Spirit, or Petrifick seed. The other cause they call *συναίτιον*, or the Adjuvant, or assisting cause, [of which sort there are many] by which the principal Agent may be furthered in its acting upon matter; of which last sort of causes [of the solidity in Bodies, *viz.* the Helping, or Assistant] we

will not deny but that salt may be one, as being such a previous disposition of the parts of Matter, as renders them more apt to be wrought upon by the first kind of Agent, viz. the Seed. So that in some sense we may [for the reasons above allow'd] allow the Chymist to think salt is [though *Nec prima materia, nec efficiens.* Yet] *Proxima materia, & auxiliatrix Soliditatis.* *The Proximate matter, and Adjuvant cause of Solidity.*

But since not only salt, but the whole *Tria prima*, or Three first Principles of the Chymists, as also the *Quaternary*, or four Elements of the Peripateticks, are justly enough denied to be the first Elements, or constitutive Principles of all Bodies, [they themselves being further resolvable into more simple parts, as we shall prove by and by,] I say, since it is so, I must be excused, if denying my suffrage to both their Doctrines, [in that large sense they propose it in:] I offer to render other causes, by which not only Solidity, but Petrification also may be introduced into Matter.

Section the Third.

37 **T**HE Doctrine I am now about to affirm, is no Novel conceit; but so Ancient, that we shall find that it was held, [and by them transmitted to posterity] not only by *Plato, Timaeus Locrus, Parmenides, Pythagoras, &c.* Philosophers of the Academick, and Iralick Sects; but also by *Orpheus, Thales the Milesian, and also by Mochos, and Sambonian, the great, and Ancient Persian Philosophers*; nay, by that Divinely illuminated Man, *Moses*.

38 I urge this point of the Antiquity of the Doctrine I am now going to affirm, because I know it is the custom of some Men, to disgust any Philosophical truth, that cannot shew it self to be as ancient as *Aristotle's* time; but to please such let them consider, that the *Hypothesis* we intend to make use of in this ensuing Discourse, beareth an equal Date with the World, and was at first deliver'd to Man by the *Ancient of Days* himself.

This Doctrine then [which hath of

late years been revived, and assumed by the Noble *Helmont*, and other great wits, I now am come to lay down, and explain; and in the next place shall endeavour to prove, and confirm it; first, by reason, then by experiment, and lastly, by Authority.

The Hypothesis is this, viz. That stones, and all other sublunary bodies, are made of water, condensed by the power of seeds, which with the assistance of their fermentive Odours, perform these Transmutations upon Matter.

That is, that the matter of all Bodies is originally mere water, which by the power of proper seeds is coagulated, condensed, and brought into various forms, and that these seeds of things do work upon the particles of water, and alter both their texture, and figure; as also, that this action ceaseth not, till the seed hath formed it self a Body, exactly corresponding with the proper idea, or Picture contained in it. And that the true seeds of all things are invisible Beings, [thought not incorporeal;] this I affirm, and I shall endeavour to prove.

But to make this the better to be understood, I shall premise some generals, and

and then descend to particular proofs of what I assert.

43 First then, nothing is produced by chance, or accident. And therefore in every Generation, or Production, there must necessarily be presupposed some kind of seed which hath a power, or faculty, to alter the Matter, and dispose it to such a Being, and Form, as God and Nature have desigh'd to produce.

44 Secondly, all bodies (in some degree) are endow'd with Life, and a power of acting: for nothing that is not Vital can promote in self to perfection. And if Bodies are distinguishable from their internal Efficients, and are Specified by them, then must they be allowed to contain a seed.

45 These positions will not [perhaps] be denied to Animals, nor Vegetables; because their supposed seed is visible. For the seed [or rather, sperm] of perfect Animals, is an efflorescence of the best parts of the blood [elaborated in the Testicles] and impregnated with Spirits from all parts of the Body; in which resideth the *vis Plastica*, or Efficiency; [and this indeed is the real seed, or geniture, though it be invisible] which containeth in it self the Image, or Type of

of the thing to be made; which in per-
forms by a Fermental Odor, on Airs, and
by breathing upon those proper juices it
finds in a Female Womb; it first coagu-
lates them, and then by degrees ex-
plicates it self, working this Female Mat-
ter into a Body exactly corresponding
with its own pre-conceived Figure: the
grosse body of the Male-seed all this
while being but a vehicle, to convey with
safety this subtile fermentative breath to
its proper place of action; which being
done, the body of the Sperm is ejected
from the Womb, as useles to Genera-
tion: is this more difficult than to be born

That this is so, hath been proved by 46
the industrious and curious dissection of
divers sorts of Beasts, made at several
seasons after their Conceptions; and
continued till the formation of the fetus; and
and yet no *Vestigia*, or foot-steps of the
Male-Sperm could be found in the womb. This
is attested by that incomparable
Man, Dr. Harvey; to whom I refer him
that desirous further satisfaction in this
point, about 5th to 20th his next page

Dr. Harvey.
de generat.
ex Ova.

The Sperm of Man, if but for a mo- 47
ment it be exposed to the touch of the ex-
ternal Air, becomes dead, and unproli-
fick; and that by reason of the subtlety
of

of the spermatick ferment; [it being very apt to desir the body of the seed.] This is a truth so generally known, that the Virtue of that Lady is justly suspected by all rational Men, who pretended to have Conceived with Child, by attracting the seed of a Man which floated in a Bath, wherein she Bathed her self.

48 As to Vegetables; They also take their beginnings, are propagated, and do fructifie, from the like invisible cause; viz, a fermentative Odor, [or Aura] which also contains the Idea of the Plant to be produced.

The body of the Seed, or Grain [which is the Casket that contains this invisible Workman] being committed to the Earth [its proper Womb], is softened by the Nitrosulphurous juice of the foil, that the *Vis Plastica* [which is the Efficient of the Plant] may, being loosened from its body, be at Liberty to act. Which being done, the body of the seed, or Grain, is destroyed; according to the sacred Writ: [Except Seed, committed to the ground, dye, it produceth no fruit:] But the Architectonick Spirit being now at Liberty, ferments, by its Odor, the Liquors it finds in the Earth, converting them

them into a juice, fit to work the Plant out of it, which it by degrees performs. [This Liquor in the Earth, is by *Pascus*, and *Helman*, by a Barbarous name, call'd *Leffas Terra*; and is the proximate matter of all Vegetables.] For proof of what I seem to have with some boldness asserted in this place, Let any sort of Grain be put for a small time in an Oven, [or any analogous heat,] that the external warmth may sufficate and excite this ferment of the Seed to take wing, and desert its body; This Grain, though entire to sight, if it be committed to the Earth, shall never by any Art be brought to produce its like.

As Vegetables, and Animals have their Original from an invisible Seminal Spirit, or breath; so also have Minerals, Metals, and Stones.

Dr. Jordan of Natural Bath. Cap. 2. p. 58, 59. To this purpose Dr. Jordan tells us, 50 There is a Seminal Spirit of all Minerals in the Bowels of the Earth, which meeting with convenient Matter, [what that is, we shall shew in its place] and Adjuvant Causes, is not idle, but doth proceed to produce Minerals, according to the Nature of it, and the Matter which it meets with; which matter it works upon as a Ferment, and by its motion procureth

procureth an actual heat, as an Instrument to further its work; which actual heat is increased by the fermentation of the Matter.

51. The like we see in making of Malt, where the Grains of Barley being moistened with water, the Generative Spirit in them is dilated, and put in Action; and the superfluity of the water being removed [which might choke it] and the Barley laid up in heaps, the Seeds gather heat, which is increased by the contiguity of many Grains lying one upon another. In this work Natures intent is to produce more individuals, according to the Nature of the Seed; and therefore it shoots forth in spines; but the Artist abuses the intention of Nature, and converts it to his ends, that is, to increase the Spirit of his Malt.

52. The like we find in Mineral Substances, where this Spirit, or Ferment, is resident, as in Allom, and Copper-Mines; which being broken, exposed, and Moistened, will gather an actual heat, and produce much more of these Minerals than else the Mine would yield; as Agricola, and Thurniser do affirm, and is proved by common experience. The like is generally observed in Mines, as Agricola,

53
Agricola, Erastus, Libavius, &c. do avouch out of the daily experience of Mineral Men; who affirm, that in most places they find their Mines so hot, as they can hardly touch them; although it is likely, that where they work for perfect Minerals, the heat, which was in fermentation whilst they were yet in breeding, is now much abated, the Minerals being now grown to their perfection. And for this heat we need not call for the help of the Sun, which a little Cloud will take away from us; much more the body of the Earth, and Rocks; nor for subterranean fires. This imbred heat is sufficient, as may appear: also by the Mines of Tingleass, which being digged, and laid in the moist Air, will become very hot; so Antimony and Sublimate being mixed together, will grow so hot as that they are not to be touched. If this be so in little quantities, it is likely to be much more in great quantities, and huge Rocks. Heat of it self differs not in kind, but only in degree, and therefore is inclined no more to one Species, than to another; but as it doth attend, and serve a more worthy Superior, such as this Generative Spirit is. Thus far he.

CHAP. A

Moreover,

53 Moreover, that Minerals, and Metals have their proper Seeds, hear further what a Mystical Chymist, (but a very rational Man) Cosmopolita says,

Nov. LXX.
Chym.
Tract. 6.

Semen Minerale vel Metallorum, creat natura in visceribus terra; propterea non creditur tale semen esse in rerum natura, p. 319.

quia invisible est. " Nature doth Create the
 " Mineral, or Metalline Seed, in the Bowels
 " of the Earth; therefore it is not believed,
 " that there is such a Seed in Nature, be-
 " cause it is invisible. And the same Au-
 thor again, thus: *Et quam prerogativam*
vegetabilla pra Metallis habent, ut Deus
illis semen iudaret, & bac immitteret excluderet? Nonne ejusdem dignitatis Metalla
 apud Deum, cuius & arbores? *Hoc pro-*
certo statuatur, nihil sine semine crescere;
ubi enim nullum est semen, res est Mortua;
 that is, " And what prerogative have Vege-
 " tables above Metals, that God should
 " put Seed into them, and undeservedly
 " exclude these? Are not Metals of the
 " same dignity with God that Trees are?
 " This may be held for certain, that no-
 " thing doth increase without Seed: for
 " where there is no Seed, that thing is
 " Dead.

So that it is plain, you see, by the afore-cited Authorities, that Minerals, and

and Metals have Seed, &c that this Seed is invisible; and that it works by the help of its ferment, or as a ferment. That Stones grow, common Experience teacheth us; as also the tenth History alledged, in the first Section of this present Essay, and consequently must be endowed with seed, and ferment; so that here is, at least, an analogous way of production to that of Animals, and Vegetables (which we have declared above) and was the thing we intended here to prove.

But before I proceed, that I may be the more clearly understood, I shall declare what I understand by the Ferment of the seed. The word *Fermentum*, which signifieth Leaven, is by some esteem'd to be *quasi fermentum*, or a thing made by; and generally is used to denote, not only a turgescence, and dilatation of the parts of Matter, (as in Leavened Bread, &c.) but also signifieth the working of any sort of Liquor, till it become Maturated, and exalted into a generous, and sprightly Drink. Fermentation is thus defined by the Learned Dr. Willis: *Fermentatio est motus intestinus particularum, seu principiorum cuiusvis corporis, cum tendentia ad perfectionem*

fectionem ejusdem Corporis, vel propter mutationem in aliud; " Fermentation is an intestine [or intre] motion of the Principles, or particles, of which any Body consists, with an intent to perfect the said Body, or change it into another. Ferments then are subtile, tenuous Bodies, [which we generally call Spirits ; for as to Leaven, Yeast, &c. they are but the cloachings of these Spiritual, and finer Substances ; as we before shewed the Grains of Vegetables, and the Sperm of Animals were :] which fine subtile breath (the Ferment) hath an expansive power ; by which, being immersed in any Matter, or Substance, it desiring to dilate it self, variously agitates the small particles of that matter it is joyned to, and making Excursions through all parts of the Subject it is resident in, it adhering intimately to every small part of the Matter, doth first by the peculiar motion it hath put them into, alter and break the particles into new shapes, and sizes ; and then by convening together with them, constitute a new texture of that Matter ; and thus a new Concrete is made by the power of the Ferment.

So that, in truth, the Ferment of a

Seed, [I mean Natural Ferment] is not any Substance distinct, or separable from the Seed it self; since it is connatural with it, and intimately the same, [and is indemonstrable *a priori*, as well as the Seed, and may be thus defined.

A Ferment is an Expansive, Elastick, or Springy power of the Seed of any thing; by which motion of its self it also moveth the smallest particles of that Matter in which it is immersed: by which motion also [which is of divers kinds, according to the variety of Seeds] the particles of Matter acquire new shapes, sizes, and postures amongst themselves; and so a new texture of the whole is produced, agreeable to the peculiar Nature of the Seed, and correspondent to its Idea; [which Idea we shall explain in its place.]

We have likewise declared often, that seeds do operate by Odors, or scents; which we think is not said without cause: for if it be well observed, it will be found, that no seeds do generate; but in the time of their acting upon the Matter there are specifick Odors produced; that is, while they are in Fermentation, and the work incompleat: for, when the Concrete is perfected, the Odor is much

much abated: [as, not to instance in artificial things, making of Malt, the fermenting of Beer, and Wine, in the Barrel, and the leavening of Dough, &c.] for 'tis observable, that the Grains of Wheat, or other Vegetables, sown in the ground, when their invisible seed begins to ferment, do send forth Odors; so also the Eggs of Birds, on which the Hen hath sat. And that Minerals, and Metals, whilst in their making they do send forth such plenty of stinking Odors; that many times the workmen in Mines are suffocated therewith; no body can be ignorant. Now these Odors are fine and subtle *Effluvia*, [or small particles of the Matter now put into motion by the power of the seed, Ferment: which having extricated themselves from their Companions, and toving in the Air, do at last strike against those parts of our Noses that are fitted by Nature to be sensible of the touch of such very small Bodies.]

59 Odors then are a sign of Fermentation begun, and are nothing but small particles of Matter got loose from their Fellows, begun to be alter'd, and specificated by the seed; and therefore are very various, according to the diversity of

D 2 seeds,

The Origin of Bodies; And
seeds, and their Ferments, from whence
they proceed.

Having before declared, that all Bodies proceed, and are made from Seminal Beings; and that the real seeds, and Ferments of things are invisible; and having declared, what I would have understood by a seedy Ferment, and Odor; and also having hinted above, that all Bodies are Materially [and Primarily] nothing but water; I shall now endeavour to prove the same more fully, and clearly; the which I shall do by three sorts of Arguments. The first is grounded upon the Philosophical Axiom; viz.

Quae sunt prima in Compositione, sunt ultima in resolutione: Et quae sunt ultima in resolutione, sunt prima in Compositione.
 " That which is first in the Composition, is
 " last in the resolution: And those things
 " which are last in the resolution, the same are
 " first in the Composition. The second Argument is grounded upon another axiom commonly received. That is, *Nutrimur sidem quibus consumus.* " We are Nourished by those things of which we are constituted, or made. The third argument shall be to shew, and prove a necessity of all Bodies being formed out of water; because neither the four Elements

of the *Peripateticks*, nor the *Tria Prima*, or three Principles of the Chymists, can possibly concur to the constituting of Bodies, as either the Efficient, or Primary Matter; they being themselves but great disguised Schemes of one and the same Catholick Matter, *Water*, from whence they were made, and into which they are ultimately to be resolved, and uniformly to be reduced, either by Art, or Nature. All which assertions I hope to prove, both by Experiment, and Reason, and shall likewise endeavour to strengthen by good and sufficient Authorities.

Section the Fourth.

61
As to the first Argument, founded on
that Axiom, that *All Bodies are
made of that Matter into which they are
ultimately resolved*, and *Contra*; This
Maxim is agreed upon of all hands, both
by the *Aristotelians*, the Old Chymists,
and the New ones; and that almost upon
the same ground. For the first supposed
all Bodies reducible at last into Fire,
Air, Water, and Earth; and therefore
D 3 held

held the Quaternary of Elements, [which, by the way, they could never yet sufficiently prove.] And the Second believed Salt, Sulphur, and Mercury to be the first Principles of all Bodies. And the last sort, the modern Chymists, hold Spirit, Oyl, Salt, Water, and Earth, to be the true Primary Principles of Bodies, for the same reason, *wiz.* because many Concretes are resolvable by fire into the first three, if not into the last five, distinct Substances before named.

But that all Bodies are by Art to be brought back, uniformly, into water, hear what that Learned Man, *Helmont*, saith.

Helmont
in tract.
de elemen-
ta. §. 11.
§. p. 43.
§. p. 43.
§. 15.

Nostra namque operatio Mechanica mibi pa-
tefecit, omne Corpus [puta siccum] Lapidem,
Gemmam, Silicem, Arenam, Marcafi-
tam, argillam, terram, Lrides coccos,
G. DeTer- vitrum, Culces, Sulphur, G. Trans-
mutari in Salem attulit, aequiponderan-
tem sed Co pori, unde fadus est: Et quod
iste ful aliquoties cobobatur, cum Sale cir-
culato Paracelli, suam omnino fixitatem
amittit, tandem transmutatur in Liquorem,
qui etiam tandem in aqua insipidam tran-
fit: Et quod ista aqua aequiponderet sali suo,
unde manavit. — Plantam verd, car-
nes, offas, Pisces, G. quicquid simileum
est,

est, novi redigere in terra sua Tria, unde
 post modum aquam insipidam Confici; Me-
 tallum autem, propter sui feminis anatiram
 commitionem, & arena [qualem] diffi-
 limè in salem reducuntur. Cum igitur
 arena, sive terra Originalis, tam Artis,
 quam Natura resistat, nec queat nullis
 [unico dunt aeat Gebenna artificialis igni
 excepto] Natura vel artis, a primæva sui
 constantia recedere; sub quo igne artificiali,
 arena sal fit, ac tandem aqua; quia vim ha-
 bet agendi super sublunaria quævis aëris
 reactione, &c. " For our handy-craft Opera-
 " tion [that is, his Liquor, Alkahest]
 " hath manifested to me, that all Bodies [to
 " wit, the Rocky Stones] the Pebble, the
 " Precious stone, the Flint, Sand, Marca-
 " fits, Clay, Earth, Brick, Metal, Glass,
 " Lime, and Brimstone, &c. may be reduced
 " into a real Salt, equal in weight to its own
 " Body from whence it proceeded: And
 " that Salt being often cohabited with the cir-
 " culated Salt of Paracelsus, doth altogether
 " lose its fixedness, and is transmuted into a
 " Liquor, which also at length becomes insi-
 " pid water; and that water is of equal weight
 " to the Salt of which it was made. — But
 " Plants, Flesh, Bones, Fish, &c. and
 " every such thing [saith he] I know how
 " to reduce into its three first Principles,

as from whence afterwards I have made an
insipid water: but Metal, by reason of its
strict, and exact commixture with its Seed,
and the Sana [quællum] are most difficult-
ly reduced into Salt: for Sand, or the Ori-
ginal Earth, doth resist as well Art, as
Nature, neither will by any means [the
only artificial fire of Gehenna excepted;
that is, the Alkahest] be made so recede
from its first-born constancy, &c. [un-
der which artificial fire the Sana is made
Salt; and at last water] because it
hath a power to work upon any sublunary
Body, without its re-acting upon it
again.

He likewise tells us, in his Tract, enti-
tled, *Complexionum atque Missionum sig-
natae Mi- menum.* *Nos etiam aquam* [quam ma-
gnum. Fig-
ment. p. 88. nissimare non Liber, &c. For I know a
l. 27. Water [which it is not fit to digest, mean-
ing the Alkahest,] by whose help all Vege-
tables are changed into a distillable juice,
which leaveth no scum in the bottom of the
glass: which distilled juice, if it be mix-
ed with Alkalies, [or fixed Salts] is re-
duced totally into insipid and Elementary
water.

And a little further in the same Tract, 64
he tells us: That he took an Oak-Charcoal,
and mixing it with an equal weight of the
Liquor

Liquor Alkahest, be put it in a glass, Hermetically Sealed, which being kept in a Balneo for three days, it was in that time turned into a couple of Diaphanous Liquors, of different colours, which swam upon each other; which being distilled together [in Sand] by a heat of the second degree, it left the bottom of the glass as clear, as if it had never been used. The two Liquors of the Coal might be distilled with the heat of a Bath, but the dissolving Liquor, [or Menstruum] in that degree of heat would remain at the bottom of the Glass, not impaired in its weight, or Virtue. And that the aforesaid two Liquors of the Coal, being mixed with a little Chalk, at thrice distilling, did ascend of the same weight as before; but having lost all their distinguishing qualities, it became undiscernable from Rain-water.

65 The Operations of this Liquor [which you have heard] in reducing all Bodies uniformly into water, is, I think, of very great force to evince, what I have here affirmed, viz. that all Bodies were Originally Water. But after all this stress I lay upon these Experiments of Helmont's, it may be objected by some, That they not being possessors of this Liquor, may be allowed to doubt of the

the truth of what he hath deliver'd concerning it. To which I answer, first, that I think it no cogent Argument, to conclude there is no such thing, because many men are not possessors of it; and if this should be admitted, all other Arts and things, that are possessed by any Man [and not known to the common people] would be liable to the same exception; and every Cobler, or Ploughman would conclude the impossibility of the effects produced by most Mathematical Automatons, or Engines, because he either knoweth not, or hath not seen the contrivance of the thing, or else is not able to conceive the reason of its Operation: And if every Man [that knoweth more than the Vulgar] would make it his own case, they would, I suppose, think it an unreasonable and hard way of judging of things.

Secondly, the Man is so conscientious to himself in his Experiments, that that very thing to me appeareth an Argument of his Truth. And as to his veracity in those things he delivers as matter of fact, [and upon his own knowledge,] I do not find that even his Enemies have detected him of Falshood; and I am sure, I have hitherto found him most true, in what-

whatsoever he hath delivered us as his own Experience [though possibly many of those things do not at first sight seem over-probable.] But lest I may seem over-partial, I will give you a Testimony of him [that may be *inflar omnium*] and that shall be from a Man, of whom the World is fully satisfied, not only as to his candid Temper, but also of his ability to judge, both of Men, and things; and the unwillingness of his Nature to encourage falsehood: and that is the Inquisitive, and Honourable Mr. Boyle, who saith thus both of him, and the Alkahest.

76 If our Chymists will not reject the solemn, and repeated Testimony of a Person [speaking of Helmont] who cannot but be acknowledged for one of the greatest Spagirists they can boast of, they must not deny that there is to be found in Nature another Agent, able to analyse compound Bodies less violently, and both more genuinely, and more universally than Fire: And for my own part, I have found Helmont so faithful a Writer, even in divers of his improbable Experiments, that I think it somewhat hard to give him the lie, especially to what he delivers upon his own proper Tryal. And I have heard from very credible Eye-witnesses some things,

Scpt. Chymist. Car-
nades
Dialogus.

The Origin of Bodies; And

things, and seen some others my self, which argues so strongly, that a Circulated Salt [or a menstruum, such as it may be] may by being abstracted from compound Bodies, whether Minerals, Animals, or Vegetables, leave them more unlocked than a wary Naturalist would easily believe; that I dare not confidently measure the power of Nature, and Art, by that of the Menstruum, and other Instruments, that even eminent Chymists themselves are as yet wont to employ about the Analyzing of Bodies. Thus far he.

Besides, he that had laboured more than thirty years in the fire, and making Experiments, in all probability might attain this secret: since Geber, and many of the Arabian Philosophers had it before him; as also Basil Valentine, Raymund Lully, and Paracelsus. Nor can I believe so grave and great a man, would in his Old Age, near his Death, impose falsehoods and lyes upon the World.

But without the assistance of this Liquor, this Doctrine may be made out; though by more troublesome, and tedious wayes; as we shall now proceed to shew.

The same worthy man, Helmont, saith, [and

[and I have found it true by experience]

Olea & pinguedines, per ignem separatae;
adjecto paucō sale Alkali, saponis Naturam
assumunt, atque in aquam Elementalem
abeant. [And again, thus :] Omne Al-

complex.
& Mission.
Elem. sign.

alkali, addita pinguedine, in aqueum Liquo-

rem, qui tandem mera & simplex aqua sit, p 86 f 12.

reducitur [ut videre est in sapone, &c.]

quoties per adjuncta fixa, semen pinguedini-
nis deposit; That is, " That fats, and
" Oyls distilled by fire, a little of an Alkaly,
" [or fixt salt] being added, do become
" soap, and at last, may be turned into
" Elemental Water. — All Alkalies,
" fats being added, are converted into watry
" Liquors, which at last is made and reduced
" into mere simple water [as it is to be
" seen in soap, &c.] as often as by a fixed
" adjunct, [such as Chalk] it shall be
" made to lay aside its seed, and fatness.

71 And again, Omne Oleum distillatum,
in sale est mutabile, & in aquam per ad-
juncta. " All distilled Oyl is to be chan-
ged into Salt, and by adjuncts into Water.
Also, the best spirit of Wine, which is
totally inflamable, if it be joyned with
salt of Tartar, will be transmuted into
mere water: which salt of Tartar it self,
by the help of Oyls [as is above decla-
red] will at last be reduced into water.

All

All Vegetables are reducible by distillation into Water, Oyl, and Salt; the water cohabitating upon Chalk becomes merely Elemental; the Oyl and Salt may, as is said above, be made to unite into a Saponary Body, which distilled, yield a stinking water, which being oft re-distilled from Chalk [or some such Body] having laid aside its seminal qualities, is indiscriminate from common water: The Salt it self [which is accounted the most permanent principle] yet by the help of fire, well contrived Vessels, and proper adjuncts, it may be reduced into a *Volatile Menstruum*, which being put to act upon Bodies, as a dissolvent, it loseth its saline acrimony, and by repeated operations it is totally converted into insipid water.

All Animals upon the face of the Earth are remigrable into water [of which they were formed.] And first, as to Snakes, Vipers, Eels, Froggs, &c, these being perfect Animals, as consisting of Organical parts, as Hearts, Stomachs, Livers, Gallis, Eyes, &c. [not to mention Worms, and other insects] some of them accounted hot Creatures, and so full of vivacity and life, that several of them will survive after the taking their hearts

hearts out of their Bodies some hours, [not to say, dayes ;] I say one would little suspect by their out-side, these Creatures should abound with moisture as they do. For, if any of them be put to distillation, you shall perceive them to boyl in their own juice, and to afford an incredible quantity of Phlegmatick Liquor, which being cohabited upon dry Bodies, as is directed in the reduction of Vegetables, returneth to water ; also their Oyls, and fatty substances, being joyned with an *Alkaly*, and made into a soap, then distilled, they yield a stinking water, which cohabited, as the other, doth likewise return into water.

74 All other sorts of living Creatures are, by the help of fire, to be dissected into Oyls, a fixt, and a volatile Salt [though they yield most of the latter] an Empirical Spirit, and Phlegm : all which by the above-said helps, and the like repeated Operations, will at last be brought into water.

75 Middle Minerals, and Mineral Salts, by Art are reducible into Corrosive Spirits ; which acting upon Bodies, are dispoil'd of their acrimony ; and, at last, return to the shape of water.

76 As for Minerals, and Metals ; if they be

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be fluxed with Alkalies, they are there-
by rob'd of their Sulphurs; to which if
you add Oyl, it is made soap, and then to
be dealt with as is above directed, by
the Example of both Vegetables, and
Animals: or else the Sulphurs of Min-
erals, separated from the Alkalizate Salt,
may be burnt, and the Fume caught by a
Glass-Bell, [as is usual in making Oyl
of Sulphur *per Campanam*] it will be
turned into a corrosive Spirit, which will
be reduced into water, as I have shew-
ed above, other corrosive Spirits may
be by acting upon Bodies.

Metalline Mercury, or Quick-Silver,
[that peerless body for homogeneity,
and likeness of parts] which exceedeth
water in weight at least fourteen times,
[the parts of it being so forcibly com-
pressed by the power of its Seed] may
yet totally be reduced into water, in pur-
posely contrived Vessels, and a skilfull
management of the fire; as *Raymundus
Lully* doth witness, and Experience with
him.

Nay, Nature her self doth in time
[by the help of Putrefaction, and fer-
ments residing in the Earth,] reduce
into water the bodies of Vegetables, and
Animals; whether Fish, or Flesh; also
Salts,

Nature of Petrification.

45

Salts, Ashes, Stones burnt to Lime, &c. witness the dunging of Land by these things. Nay, Metals themselves in time, having past their ~~ages~~ or prime, degenerate into middle-Minerals, and Salts; and then return to water. So that you see, all Bodies have water for their first Matter; and are by Art and Nature reducible into it again at last.

79 Paracelsus [⁷⁹ Person hardly inferior to any Man in the knowledge of Metals, and Minerals] giveth us his Opinion of the production of Metals, and Stones, from water, in these words. *Sic ergo Mirabilis Consilio Deus constituit, ut prima Materia Naturæ esset aqua, mollis, levius, potabilis; Et tamen fœtus seu fructus ipsius est durus; ut Metalla, Lapidès, &c. quibus nihil durius est.* " So therefore as God hath ordered, by a wonderful Counsel; " that the first Matter of Nature should be " water, soft, gentle, potable; and nevertheless the off-spring, or fruit of it, is " hard; as Metals, and Stones, &c. than " which nothing is harder.

Plato also is of the same judgment with him; for he tells us. *Aqua genera* ^{Plato. Tim.} *duo sunt præcipua, unum humidum* ^{me. p. Græc.} *υγένιον,* ^{488. Latin.} *alterum fusile χυτόν:* " There are two sorts ^{p. 718.} " of waters, one moist, the other fusil, or

E

et cetera.

"take melted. And presently after, he explaineth what he meaneth by fusil wa-
ters. *Ex his vero quas aquas fusiles ap-
pellamus, quod ex tenuissime levissime
que sit densissimum, uniforme, splendidum,
flavumque, et præciosissimam res est aurum flo-
reiens per petram compactum est:* "But of
"these, which we call fusil waters, [or to
"be melted.] Gold flowering through the
"Rock is compacted; for it is, of a most soft,
"fine, and tender thing, made most hard,
"uniform, splendid, and yellow, and is a
"most precious thing.

The Seeds of Minerals, and Metals, are invisible Beings; [as we have shew-
ed, above, the true Seeds of all other things are;] but to make themselves
visible Bodies they do thus: Having got
ten themselves suitable Matrices in the
Earth, and Rocks, [according to the
appointment of God, and Nature] they
begin to work upon, and Ferment the
water; which is first Transmutes into a
Mineral-juice, call'd *Aur*, or *Mer*: from
whence by degrees it formeth Metals.
To which purpose I shall give you a re-
stimony, or two. The first we bor-
row from that Book, Entituled, *Arca
Arcani artificiosissimi aperte*, beginning
thus: *Agitur No: andum est, &c.* Which
because

because the passage is long, we will only give you in English, thus: Therefore it is to be noted, that Nature hath her passages and veins in the Earth, which doth distill waters, either Salt and Clear, or else turbid. For it is alwayes observable by sight, that in the Pitts, or Groves of Metals, sharp, and salt waters distill down; therefore while these waters do fall downwards, [for all heavy things are carried downwards] there doth ascend from the Centre of the Earth, Sulphurous Vapours, which do meet them. Wherefore if so be, the waters be saltish, pure, and clear, and the Sulphurous Vapours pure also, and both of them do strictly embrace each other in their meetings, then a pure Metal is produced; but in defect of such purity, [that is, of the Water, and Vapour] then an impure Metal is generated: in proportioning of which Nature spendeth near a thousand years before she is able to bring it to perfection; and this happeneth either by reason of the impurity of the Salt, Mercurial waters, or the impure Sulphurous Vapours. When these two do embrace each other, stand up close in Rocky places; then by the Operations of Natural heat there doth arise from them a moist, thick, fat Vapour, which fratheth it self where the Air cannot

Theatrum
Chym. vol.
5. p. 305.

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some, [for else it would flye away:] of this Vapour a Mucil-ginous, and unctuous Matter is made, which is white like Butter; Mathesius calleth it Gur: it will spread like Butter, which I also can shew in my hand, above, and out of the Earth. And the same Author again, thus. The Matter of Metals before it be Coagulated into a Metalline form, is like Butter made of the Cream of Milk, which may be clam'd, or spread as Butter, which he meaneth Mathesius calleth Gur, which I also [saith the Author] have found in the Mines, where Nature hath produced Lead; And that Industrious Metallurgist, Webster, [who hath likewise noted the same pallage's out of this Author] assureth us, that he hath in his possession some pounds weight of this Meralline Liquor, called Gur:

To which I will also add my own Testimony; which is, that about eighteen years past, having made a Visit to a Friend, who dwelt upon the Borders of Derby-shire; and who had at that time newly discover'd a Lead-Mine in his Ground: I remember, that being at the said Mine I saw upon the Work-man's breaking a stone of Lead-Ore, a bright shining Liquor spurt forth; which in a little

Area Ar-
can. p. 318.

Metallio-
graph. p. 50.

83

little while did coagulate, and become solid.

83 And that Worthy Man, *Helmont*, confirms what we have related of this Metallic juice, in these words:

Non raro nempe contingit, quod Metallicus, in fodiis, saxa diffingens, debiscat paries, & rimam det, unde tantillum aqua; oper. subalbide, virescentis, manavit, quod p. 127. mox concurrit instar saponis liquidi [Bur voc] mutatique deinceps pallore subvireti, flavescit, vel albescit, vel saturatus virescit. Sic enim visum est, quod alias intus, absque saxy vulnere, sit; Quia succus ille interno Efficiente perpicitur, Est ergo prima seminis Metallici vita in Condovive Promittuaria loci, homini plane incognita: at ubi semen in lucem, Liquore vestitum, proposit. Et qas incepit Sulphur aquae inquinare, vita est seminus media; ultima vero, cum jum indurescit; that is, It many times happeneb, that a Minerall man, in the Pitt, breaking stones, the wall is opened, and a Ghink is made; from whence a little water bath flowed, of a whitish greeness, which presently haib thickned like soft soap. [I call it Bur, saith he; but I suppose it should be written Gur] and by and by the somewhat greenish paleness being changed, it groweth

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“ groweth yellowish, or whitish, or more
“ fully greenish: So that that is brought
“ to sight, which nevertheless was made
“ within, if the stone had not been broken;
“ because that juice [or Liquor] is
“ brought to perfection by an internal Effi-
“ ent; therefore the first life of the Metal-
“ lick seed is hid in the little store-house,
“ [or Celler] of the place, altogether
“ unknown unto Man: but when the seed
“ is brought to light, invested with a Li-
“ quor, and the Gas hath begun to distil
“ the Sulphur of the water, it is then the
“ middle life of the seed; but the last life
“ is, when it is now grown hard, [that is,
“ become a true Metal.]

84. And again, that this Metalline juice, which he calls *Bur*, [and other Authors *Gur*, which is the true proximate Matter of all Metals] was Originally nothing but water, coagulated by the power of Metalline Seeds; Hear what the same Author sayes: *In terra nimurum*
Helmont, *fracefcent auras, semas loca vel insidiam*
in element. *acquirit, id quoque vel in Liquorem, [Leffas]*
et nimurum Plantam, vel insidatum [Bur]
metallorum transit; iuxta species, per di-
versum seminum Elephas: Indeed the
stone, by continuing in the Earth, grow-
ing purer, doth obtain a local, or
im-

“ implanted Seed ; and by that means it is
“ changed either into the Liquor [Lellas,]
“ for all Plants [to be made out of it] or
“ else into the Mineral Juice [But] ac-
“ cording to the particular kinds, chosen by
“ the direction of the Seeds.

85 But that you may not think, that Lead
alone is formed from this Buttery, or
Soap-like substance, which we have been
speaking of ; but also that all other Me-
talline, and Mineral bodies are produced
from the same ; I shall give you an In-
stance, or two : Erasmus, as I find him
quoted by Webster, saith, I have two
stones of Iron, one of them of an ironish colour,
the other of the colour of the shell of a ripe
Chestnut ; altogether soft, and fatty, that
may like Butter be wrought with the
fingers ; from which notwithstanding, hard,
and good Iron was extracted by the fire.

86 Concerning the generating Silver from
such a Mineral-Liquor, that Honoura-
ble Petion, Mr. Boyle, tells us [from
Gerritius] thus. Item aqua Cœrulea in-
venta est Annebergæ, ubi Argentum ad-
buc erat in primo Ente, qua coagulata, re-
ducta in Glaçem fixi & boni argenti ;
et also that at Anneberg a blew water
was found, where Silver was yet in its
first Being, or Ens, which coagulated,

Metal. p.
44.

Scept. Chym. p.
360.

it is reduced into the powder, or Calx of
fixed and good Silver.

As for Gold, and Antimony, Paracel-
lus saith, it is to be found in its *Ens pri-
mum*, or first Being, Liquid, and in the
form of a Red Liquor, or Water, which
afterwards is coagulated and exalted into
Gold.

Again, he saies of the *primum Ens lege
solis*, that it is a fugacious Spirit, as yet
consisting in volatility, as an Infant in the
Womb of a Woman, and is sometimes
like a Liquor, and sometimes it is found
like an Alcool, or subtile powder.

"Tis a common known thing, that
those Men which bore the Ground to
find out Coal-mines, do, when they
come near the Mine, bring up in their
borer a sort of matter they call Soap-
stone, which is like fat Clay, but of a
black colour, and will, when new taken
out of the Ground, spread like butter,
as *Gur* will do; but in the Air will
soon become so hard, that it will not cut
with a Knife.

I might here take notice of what Ru-
landus hath said of the *Medulla Lepidis*,
which the Germans call *Steinmarck*;
some of which is white, some
red, and some of other colours,
and

and most of it in substance like the fore-mentioned *Gur* : but to avoid being tedious, I forbear. And of this sort of coagulated water were those Pebbles made, which *Peireskius* found soft under his feet in the River *Rofne* ; as is related in the tenth History of Petrification, in the first Section of this Discourse.

90 So that, I think, it is evident, first, by the afore-cited Authorities, which hold that all bodies were made of water, and seed ; and secondly, by the al-leadged Experiments, teaching the Reduction of all bodies into water again ; that the Original of all *Concreta*, [even those solid ones of Metals, and Stones] is water.

91 And I do not find that very ingenious man, Mr. *Boyle*, to be against this Opinion : for he saith thus ; *Yet thus much I shall tell you at present, that you need not fear my rejecting this Opinion* ; since *boyle* over the *Helmontians* may in Complement to their Master, pretend it to be a new dis-
Scrp. chym. p. 218.

92 I have now done with the first Argu-
ment, that is, that all Bodies are made
of

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of those things into which they are at last to be resolved, and that I have prov'd to be water.

I now proceed to the second Argument, *viz.* that all Bodies are Nourished by that of which they are Constituted.

Section the Fifth.

THAT Vegetables are nourished by water, will plainly appear from hence, that no Plants do either grow, or increase without the assistance of water; either by the way of Rain, or Dew, or else by the overflowing of some Spring, or River; for if they be destitute of water, they dye, and wither.

And it is commonly known, that the tops of Rosemary, Marjoram, Mint, Bume, Pennyroyal, Crows-foot, and many other Plants, will thrive, flourish, and grow to a large Bulk [without being Planted in the Earth,] If they be only put into a Glass with fair water in it; to which abdy will shew one springy Root, and from whence they will gather

96 sufficient Nourishment to become large Plants.

To confirm which I shall relate a couple of very remarkable passages; the one borrowed from that honourable Philosopher, Mr. Boyle; the other from that Learned Naturalist, Helmont.

97 Mr. Boyle tells us, that he caused a certain quantity of Earth to be digged up, baked in an Oven, and weighed; and then put into an Earthen Pot, in the which he set the seed of a Squash, which grew very fast, [though planted too late, viz. in the Month of May] it being watered only with Spring, or Rain-water: in October [by reason of the approaching Winter] he caused it to be taken up, and the weight of it, with its stalk, and leaves, was found to be two pounds, twelve Ounces; and the Earth [in which it grew] being baked as before, it was found to be exactly the same weight.

Scept. Chy-
mift. p. -

98 Helmont's Relation is this: He took, he faith, two hundred pounds weight of Earth, which was dryed in an Oven, and putting it into an Earthen Pot, he moistened it with Rain-water, and in it he Planted the trunk of a Willow-Tree, which weighed five pounds, [covering the

Complex.
Or. Miss.
fig. p. 32.
p. 30.

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the Pot with an Iron cover, which had a hole for the Tree to grow out at,] and at the end of five years, he took up the Tree, and found it to weigh one hundred and sixty nine pound, three Ounces, and the Earth being dried, was of the same weight as at first.

Now if this be thoroughly consider'd, 93
from what can we possibly suppose, the
bulk of the Earth, and this great addi-
on of 164. pounds weight to the Tree,
did proceed but from meer water; there
being nothing else added to either of
them? and no doubt, Nature observeth
the same course in producing all other
Vegetables; whether springing up from
them in nati. Seeds, or transplanted into
other soyls; for the Earth is only a Re-
ceptacle to receive the seeds of things,
[and to sustain the weight of Minerals,
Animals, and Vegetables; which Seeds,
conceive in the water; where they be-
get themselves Bodies, and from which,
all Plants arise; and by the power of the
Archetypick Spirit of the seed, fer-
menting the particles of water, do pro-
ceed the stalks, wood, leaves, flowers,
fruit, grain, [or Casket of the real
seed] as also the Colours, Odors, Tastes,
and all the specificate qualities of the
Plant,

Plant, according to the Ideas wrapt up in the bosom of the seed. Animals also are nourished by water; some immediately, others mediately.

100 Immediately, from meer water, as Salmon, Sturgeon, and several other sorts of Fish, in whose stomacks no food, that I know of, was ever yet found. And to confirm this, *Rondeletius* [an Author of good credit] affirms, that his Wife kept a Fish in a large glass, and fed it with nothing but water [so long] till it grew so big, that it could no longer be contained in the glass; which they were forced to break to get it out.

101 Those living Creatures that are nourished immediately by water and Vegetables, are most sort of Cattel proper for food; so that in these Beasts, which feed upon Corn, Grass, and other Herbs, [which are really but water, once removed from its primitive simplicity by the power of Seeds,] water is a second time transmuted, by the Ferment of a Beasts stomach, by which it is changed into Chyle, Blood, Milk, Urine, Flesh, Bones, Fat, Sinews, &c. and all these different one from another, according to the species of the Beasts that feed upon them.

Now

Now these Creatures, and their parts 71
 [as the flesh and milk of beasts] serve
 for food to those Animals that are nou-
 rished mediately from water; such are
 Men, and divers Wild beasts, who live
 upon the flesh, milk, and blood of Cat-
 tel, and by the Ferments of whose sto-
 macks these things are again Transmu-
 ted into another kind of Chyle, blood,
 flesh, bones, milk, Urine, &c: which
 juices of our bodies are still but water
 disguised by the operation of different
 seeds, and Ferments; which is quickly
 discovered by distilling them: for, if
 our blood be distilled, five or six parts of
 seven will rise in Phlegm [which is
 easily reducible into simple water, as we
 have shewed in the last Section before
 this.] 101

Nay, the sperm of Man [by which 103
 we propagate our selves,] is nothing
 but water [Originally] altered by the
 several Ferments of the body, and cir-
 culated in the seminal Vessels. 111

Upon this Subject there is much good 103
 matter to be found in that ingenious man,
 Simpson, in his *Hydrologia*.

It now remains, that we prove the 104
 growth, and nourishment of Metals and
 Stones from water: which that we may
 the

the better do, I think it necessary, in the first place, to discover, whether they do really grow, and increase or no; for some men believe, that God Created them at first, when he formed the world; but that since they do neither grow, nor increase: which error we shall endeavour to confute by several good Observations, taken from approved Authors.

105. Almost all the Mystical Chymists have handled this point so obscurely, that though they have asserted, that metals and stones do grow and increase, and that they are generated from a seminal principle; yet have they proved nothing clearly; but left it as a principle to be granted, without any further dispute.

106. 'Tis a known truth in Cornwall, that after all the Tin, that could be found in a Mine, hath been taken out, and the Mine filled up with Earth; yet within thirty years they have opened them again, and found more Tin generated: of which Dr. Jordan doth take notice also, and in the above-cited place he sayes thus: *The like hath been observed in Iron, as Ganderius Merula Reports of Ilna, an Island in the Adriatick Sea, under the Venetians, where*

*Nat. Barb.
Cap. 11.
p. 51, &c.*

where Iron is bred continually, as fast as they can work it; which is confirmed also by Agricola, and Baccius. The like we rende of at Saga in Lygits, where they dig over their Mines every ten years.

And of Ilna it is remembred by Virgil, who saith, *Ilnaque inexhaustis Chalybium generosa metallis.* John Mathe-

situs giveth us Examples of almost all sorts of Minerals, and Metals, which he had obserued to grow, and regenerate. The

In Script. *Conc. 3. p. 11, &c.* like Examples you may find in Leonar-

dus Thurniferrus; Erastus affirms, that

he did see in St. Joachim's Dale, Silver

Alchym.

Mig. De grow upon a Beam of wood, which was *Metallis.* placed in the Pit to support the work; and

p. 17, &c. 19 when it was rotten, the Work-men coming to set new Timber in the place, found the Sil-

ver sticking to the Old Beam. Also he re-

ports, that in Germany there hath been unripe, and unconcocted Silver found in

Mines, which the best workmen affirmed would become Silver in less than thirty

years. The like Modestinus, Fucchius,

and Mathefius, affirm, of unripe, and liquid Silver; which when the workmen

find, they use to say, we are come too

soon.

Ex. Al- And Rulandus saith [speaking of Sil-*107*ver that is to be found Naturally purified in

Alchym. p. 56.

in the Mine,] Sed hoc vegetum putum
 tensissimis brachis amplectitur Lapidem;
 interdum etiam pra se fert speciem Capil-
 lorum, interdum virgularum, interdum
 globi fert spaciem, quasi filis convoluti
 candidis, aut rubris; interdum pra se fert
 speciem arboris, Instrumenti, Montium,
 Herbarum, & aliarum rerum. " And
 " this pure Silver doth embrace the Stone
 " with most fine Plates; it sometimes also doth
 " bear the shape of hair, sometimes of little
 " twiges, sometimes of a Globe, as though
 " wrap'd about with thred, white, or red;
 " sometimes it appeareth in the shape of
 " a Tree, Mountain, Instrument, Herbs,
 " and of other things.

108 Mr. Boyle tells us from *Gerrhardus*,
 thus. In *Valle Joachimaeæ*, &c. [saith
 he] In the Vale of Joachim, Dr. Shre-
 ter is a Witness, that Silver, in the man-
 ner of Grass, had grown out of the stones of
 the Mine, as from a Root, the length of a
 finger; who hath shewed these veins, very
 pleasant to behold, and admirable, at his
 own House, and given of them to
 others.

F

And

Peter Mar-
tyr. Decad.
3. Cap. 8.
p. 139.
Webster,
p. 48.

And to shew you, that Metals do grow even like Vegetables, it is very remarkable what is quoted by Webster, out of Peter Martyr, Counsellour to the Emperour Charles the Fifth, in these words: They have found by Experience, that the Vein of Gold is a Living Tree, and that the same by all waies spreadeth, and springeth from the Root, by the soft pores and passages of the Earth, putteth forth branches even to the uppermost part of the Earth; and ceaseth not till it discover it self to the open air; at which time it sheweth forth certain beautiful colours in the stead of flowers: round stones of Golden Earth, instead of fruit, and thin plates instead of leaves: These are they which are dispersed through the whole Island [he is speaking of Hispaniola] by the course of the Rivers, Eruptions of the Springs out of the Mountains, and other falls of the Floods: for they think, such grains are not engendered where they are gathered, specially on the dry Land, but otherwise in the Rivers. They say, that the root of the Golden Tree extendeth to the Centre of the Earth, and there taketh nourishment of increase; for the deeper that they digg, they find the

trunk

trunk the bigger, as far as they may follow it for abundance of water, springing in the Mountains: of the branches of this Tree, they find some as small as a thread, and others as big as a man's finger, according to the largeness, or breightness of the Rets, and Clefs; they have sometimes lighted upon whole Caves, suspended, and born up, as it were, by Golden Pillars, and this in the way by which the branches ascend; the which being filled with the substance of the Trunk, creeping from beneath the branch, maketh it self way, by which it may pass out. It is oftentimes divided by incouning with some kind of hard stone; yet is it in other Clefs nourished by the exhalations and Virtue of the Root.

110 To which I might add what Fallopius saith of Sulphur, [viz.] *Sunt enim loca, à quibus si hoc Anno Sulphur effusum fuerit, intermissa fessione per quadriennium, redent fossores, & omnia Sulphure, ut arcta, rursus invenerint plena:*
"For there are places, from whence if this
"Year the Sulphur be digged out, and for-
"bearing to dig, by the space of four years,
"the

The Origin of Bottles; And

the Mine-men return, and find them all full of Sulphur, as before.

And that Salt-Petre groweth, and increaseth, our common Salt-Petre-men will justify; for after they have extracted all the Salt that they can get out of the Earth that yieldeth it, in two or three years after, they work the same Earth [which for that purpose they carefully lay up] over again; and it yields them a considerable quantity of Salt-Petre, as before.

*Mer. de
Sale. Cap.
7. p. 33,
34. & 35.*

And concerning Table-Salt, *Matthias* 113 *unxerius* produceth many Testimonies from credible Authors, that besides that which is made of Salt-Springs, there are in Spain, the Indies, and divers other parts of the World, large Mountains of Salt, which as fast as they can be digg'd, grow again, and are quickly filled with Salt.

And for Lead, [besides what *Galen* 113 observeth of its increase, both in bulk, and weight, by being kept in a damp Cellar,] *Euratinus Certalus*, as he is cited

cited by Mr. Boyle, saith thus of its growth; *Pesulatum Mons*; &c. Of the Mountain of *Fesula*, a Village near Florence, that it hath Lead-stones; which if they be digg'd up, yet in a short space of time they will be supplied afresh, and generated anew. I might instance in many more particulars, but I think these sufficient.

114 That Stones do grow, and are made since the Creation, every mans Observations will sufficiently acquaint him: And the Histories cited in the first Section of this Discourse do confirm; and that they are nourished by water, is apparent from the Sciuation of Rocks in the Sea, the production of Pebbles in the bottom of Rivers, and that both Mountains, and also gravelly places, are never destitute, or unaccompanied of Springs and Rivulets.

115 And *Paracelsus*, I remember [somewhere] giveth us this Experiment, to prove that stones do grow, and are nourished by water; viz. that if a Flint, or Pebble be put in a glass Vessel, and Rain,

or Spring-Water put upon it, and distilled from it, if this be often repeated, it will cause the Stones to grow so bigge that at last it will fill up the Glasse that contained it, a bigger od yond in diuers
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1 That Metals, and Minerals are nourished by water, is more than probable from hence, that no considerable Mines are found without a great conflux of waters, whitch the Work-men are forced to make drains and Pumps to carry away, that they may work dry.

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ons of Congulation, Congelation, and Fixation, until it was turned into Earth; which Earth produced Animals, Vegetables, and Minerals: the Animals did eat, move of themselves, &c. and by the true Anatomy I made of them, I found they were composed of much Sulphur, little Mercury, and less Salt: the Minerals began to grow, and increase, by converting into their own Nature one part of the Earth; they were solid, and heavy; and by this truly demonstrative Science, namely, Chymistry, I found they were composed of much Salt, little Sulphur, and less Mercury.

According to this Experiment, Minerals were Generated out of, and nourished by water.

118. From what hath been related, both in this and the fore-going Section, concerning the growth, increase, and Vegetability both of Metals, Minerals, and Stones; as also concerning those Mineral, Metalline, and stony juices, called Gur, [or Bur] Soap-coal, and the Medulla Lapidis, &c. I think it will

F 4 appear,

appear, that both Metals, and Stones, are made, do grow, and are nourished, daily, and at this time; and that from water, of which they were at first made, by the power of their Seeds: And this is the reason, that Metals, and Mines are now usually found in those places where for many Years before there were none; as both Sandivogius,

Nov. Lxxm.

Chym.

Tratt. 4.

p. 314.

Helmont,
In Mag.
Oport.
p. 127.
ff. 39.

and Helmont assure us. *Inde sit, quod*
bodies reperiuntur. Minera in locis ubi
ante mille annos nullis fuerant. "From
hence it is come to pass, that Minerals
may be found in places, where before a
thousand years since, there have been
none. And Helmont, thus: *Loca enim*
que fodiuntur arvæ olim, suo quando-
que die, naturæ semine, fædra redi-
dent, dicituribus non impario; quia radices,
sive fermenta Mineralium, sedent in loco
immediate, ac in dierum plenitudinem
sive fastidio anbelant: quæcumq; ubi
semen complevit, tum Gas obſidens aquam ibidem,
semen a loco fascipit, quod aquæ sulphur deit
impregnat, aquam condensat, atque sensim
aquam Mineralē transplantat: "For
places which have wanted [or had no]
Mines in times past, will in their own
time,

119

120

“ time, their Seed being ripened, restore
 “ Usury, equal to the richer sort [of
 “ Mines] because the Roots, or Mineral
 “ Ferments, are seated immediately in the
 “ place ; and their full time being come,
 “ they [part] or breathe without [wear-
 “ i ness] or loathing : and when it hath
 “ gained a compleat Seed, then the Gas
 “ which is seated in the water of that place,
 “ receiveth that seed of the place, which af-
 “ terwards begets the Sulphur of the water
 “ with Child ; condenseth the water, and
 “ by degrees turneth, or transplants it into
 “ a Mineral water.

119 And, to conclude this Section, I
 will give you the Judgment of that great
 Naturalist, Helmont, by way of con-
 firmation ; because I find him exactly to
 correspond with all that I have hitherto
 delivered.

120 His words are these, which you shall
 find in his *Imago Fermenti* ; which be-
 cause they are long, I will only give you
 their sense in English. And indeed be-
 cause the Schools have been unacquainted
 with Ferments, they have also been ignorant,
 that

Helmont,
*Imag. Fer-
 menti.* p. 94.
 l. 29, 30,
 31.

that solid Bodies are framed only of water, and Ferment: for I have taught, that Vegetables, and Grain, and whatsoever Bodies are nourished by them, do proceed only from water: for the Fisher-man never found any food in the stomach of a Salmon; if therefore the Salmon be made of water only, [even that of Rivers] he is also nourished by it. So the Surgeon wants a mouth, and appeareth only with a little hole below in his Throat, whereby the whole fish draweth nothing besides water. Therefore every Fish is nourished, and made of water, if not immediately, yet at least by Seeds, and Ferments, if the water be impregnate therewith. From the Salt-Sea every fresh Fish is drawn; therefore the Ferment [of the Fish] turneth Salt into no Salt, or at least water into it self. Lastly, Shell-fish do form to themselves stony shells of water, in stead of Bones; even as also all kind of Snails do, and Sea-Salt, which scarce yieldeth to the force of a very strong fire, growtheth sweet by the Ferment in Fishes; and their flesh becometh volatile: for, at the time of distributing the nourishment, it is wholly dissolv-

dissipated, without a resistance, or drags. So also Salt passeth over into its Original Element of water, and the Sea, though it receive salt Streams, yet is not every day increased in saltiness. So the most animaded, and most purest water, under the Equinoctial Line breedeth bony, and stinketh: strait-way it getteth the colour of a half burnt brick, then is it greenish, then red, and quaketh very remarkably; which afterwards of its own accord returneth to it self again: truly this cometh to pass by reason of the conceiv'd Ferment of that place, which being consumed, all these appearances cease. So the most pure Fountain-water groweth filthy, through the moist Ferment of the Vessel; it conceiveth Worms, breedeth Gnats, and is covered with a skin. Ferns putrifie from the bottom, and hence arise Frogs, Shell-fish, Snails, Horse-leeches, Herbs, &c. also swimming Herbs do cover the water, being contented with drinking only of this putrid water. And even as stones are from Fountains wherein a stony Seed exists; So the Earth stinking with Mortallick Ferments, doth make out of water,

ter, a Metalline, or Mineral Bury; but the water being in other places stoln up in the Earth, if it be nigh the air, and stirred up with a little heat, it purifies by continuall, and is no longer water, but the juice Lettis of Plants, by the force of which bury Ferment, a Power is conferred on the Earth of budding forth Herbs. For that putrefying juice by the prick of a little heat doth ascend in smok, becomes spangy, and is compassed with askin, because the ferment therein bid require it. Therefore that putrefaction hath the office of a Ferment, and the Virtue of a Seed, and by degrees it obtaineth some measure of Life, and hasteneth by the Virtue of its Seeds into the Nature of Aerbens. Therefore this putrid juice of the Earth, is Lettis, from whence springs every Plant not having visible seed, which nevertheless bring forth seeds, according to their destination. Therefore there are as many rank, putrid, musty smells, as there are proper savours of things. For Odors are not only the Messengers of Savours, but also their promiscuous Parents. The smoky Lettis being now comprest together,

they, doth first grow pale, then somewhat yellowish, and presently after is of a whitish green colour, and at last fully green. And the power of the several species being unfolded, it gains divers marks, and different colours: in which course it imitates the Example of the water under the Equinoctial Line. Yet in this it differs, that these waters have borrowed too Spiritual and volatile a Ferment from the Stars, and place, without a Corporal bony putrefaction; and therefore through their too frail Seed they presently return into themselves. But Leffas is constrained to finish the *Act*, [and obey the Power] of the Conceived Seed. Therefore Rain Conceiving a bony Ferment, is made Leffas, and is suck'd in by the lufffull Roots: 'Tis experienced also, that within this Kitchin [of the Root] there is a new bony putrefaction produced by the Ferment which is Tenant there; by and by it is brought from thence to the Bark [which is as it were the Liver of the Plant,] where it is invicid with a new Ferment of that part, and is made a Herby, or Woody juice; and at length it being come to

Mall.

Maturity, it is made Wood, or Herb, or becometh Fruit. If the Arm, or Stem of a Tree shall be putrefied under the Earth, then the Bark or Rinde becometh dry, and cleaveth off under, and sendeth forth a sprout by its own Ferment, which in the beginning is spungy, but at length hardens into a true Root: and so Planted Branches become Trees by the abridgment of Art.

Therefore it is now evident, 121 that all Bodies primitively, and materially are made of water, by the help of Seeds, and their Ferments; and that the Seeds being worn out, and exhausted by Aeing, all Bodies do at length return into their Ancient principle of water: yet, that Ferments do sometimes work more strongly than fire, because that fire can turn great Stones into Lime, and burn Wood into ashes, but there it stops; but notwithstanding, if they shall assume a Ferment in the Earth, they return into the juice of Lettas, and at last into simple water. For Stones, and Bricks,
do

do of their own accord, decline into Salt-
pore. Lastly, Glass which is unconquered
by the fire, and uncorrupted by the air,
in a few years purifies by combustion [in
the Earth] and undergoes the Laws of
Nature, &c.

132 Having now gone through the two
first Arguments, by which I proposed to
prove the Doctrine I have asserted,
which Arguments were grounded on
two generally received and allowed Ax-
ioms, [viz.] Those things which are
the last in the resolving, [or retexing]
of a Body, the same are found to be the
first in its composition. Secondly, we
are nourished by those things of which
we are made, [or consist.] And ha-
ving, I hope, sufficiently proved by both
of them, that Water is the Original
Matter, and Seeds the Efficient of all
Bodies; I am now come to the third,
and last Argument, which was to shew,
and prove a necessity of all Bodies being
formed out of water; because neither
the four Elements of the *Aristotelians*,
nor the three Principles of the Old Chy-
mists, no, nor yet the five of the Mo-
dern

The Origin of Matter, And

then Chymists ; can possibly concur to the constituting of Bodies, as either their Primary Matter, or Efficient ; they being themselves but great disguised Schemes of one and the same Cartolick Matter, Water, from whence they themselves were made ; and into which they are ultimately to be resolved, and uniformly to be reduced.

Section

SECTION THE SIXTH.

And First for the *Chemical Principles*, I have shewed [in the Fourth Section of this Discourse,] That the Oyls of *Vegetables*, and their Fermented Spissas, which are their *Sulphurs*; that the Fats, and Oyls of *Animals*, which are their *Sulphurs*; and also the *Sulphurs* of *Minerals*, and *Metals*, are all of them reducible into Water: As are also both *Mineral*, *Animal*, and *Vegetable Salts*. And as to the *Mercury* of *Animals*, and *Vegetables* (improperly enough so called,) they being but of a loose *Contexture*, are easily made to *remigrate* into water; (as I have taught in the same place;) As also is (though with some what more *resistancy*, because of its *strong Compression* by its *Seed*;) true *Metallin Mercury*, or *Quicksilver*, as my own *experience* hath assured me: Which is also confirmed by *Raymundus Lullius*, the ingenious Mr. *Boyle*, and divers others.

G

AD

226 All this may be performed two ways, that is, Either by the means prescribed in the forecited pages, or else more solemnly, speedily, and universally, by the help of that rare Solvent, the *Alkahest*: The manner of whose operating upon Bodies, I have described from the relation of that worthy man *Reinhard* [in the fourth Section.]

227 Now as to the two other Principles added by the Modern Chymists, the one of them, viz. Earth, hath Property Belong to the School of the *Sophists*, and therefore I speak to that, when I come to discourse of the Four supposed Elements of Bodies.

228 But as to the other, i.e. Spirits, they are all of them of one of these two Classes, either Vinous, and made by Fermentation, or Saline, and made with Spirit.

229 Now for the Vinous, they are totally inflammable Bodies, and therefore to be Ranked under the Class of *Spirits*, and may be reduced to water, as I have shewed you above: Other *Spirits*, and Spirit of Wine it self may.

230 The other sort of *Spirits*, i.e. Saline, are nothing but VOLATILE SALTS, diluted with

with Phlegme or water; and therefore
by repeated distillations, and careful re-
solutions, will be brought to constitute
3. *Lauor Mētē* of dry Salt. Wherefore
this is not an other Principle, distinct from
the former three of the Old Chymists;
and by the same handy-calls-means, may
at last be reduced to water; as I have be-
fore shewed the three Principles of the
Chymists may be thus 4. *YMM* 1. *oldē*
Now indeed can any of these three Bo-
dies, called Salt, Sulphur, and Mercury,
pretend to be the principles of all Con-
crements, except only Mercury, or Water;
which is proper for Principles, that they
be Primary, and not further resolvable
into more simple parts: But both Salts,
and Sulphur [as I have made out above.]
Being furnished reducible, min. into Wa-
ter, they therefore cannot [whilst such]
deserve the Name of Principles. 5. *oldē*
Besides, it is very much questioned by
those two great Philosophers, Helmont,
and Boyle, whether the Fire indeed be an
adequate and fit instrument to Anatomise
Bodies: And whether or no those distinct
Schemmes, into which the common Chy-
mists resolve the matter of Bodies by
Fire, [and which they call their three
- 190 -

Principle,] were indeed reallyickling, in those Bodies, from which they were deduced; [that they were materiallly there, no man will deny, they being themselves composed of water.] But whether they were resident in the Concrete that yielded them in the same Figures, and Shapes, that the Fire bathes them to our Senses, is very disputable? And it may easilly be imagined, that the Fire acting upon a Body that it can master, [for some Meaneat] doth not only put the small parts, of which the Body consisted, and which were before [in some measure] at rest among themselves, into a impetuous motion, by means of whith, they are soon hasted into the Receiver; but doth also break by forcing them asunder, those small particles of that body into such Shades, Figures, and Sizes: upon which account they do conuent together after new manners; and so the Fire may present us with new Bodies, which were not præ-existent in the Concrete, when first exposed to its Action.

But because this point is throughly, and Learnedly handled both by *Hales*, and my excellent Friend Mr. *Boyle*, in his

Scrp.

Supercilious Chymist, I shall spare my self the pains of expatiating upon it ; and refer the Inquisitive to those two Authors, for full satisfaction in this point.

333 Only I think it very necessary in this place, to examine the Arguments which are brought by a very learned man, and Eminent Physician, to evince the real Existence of the Chymical Principles in Bodies, and to prove that they are not products of the Fire. And I the rather take notice of it here; First, because they are not bare ratiocinations of this Learned man, but experiments, upon which he hath built very much: And Secondly, should I omit to examine these Experiments, [which indeed do seem weighty] they might perhaps be produced against the Doctrine I defend: And some might likewise object, that I had not dealt candidly with the Chymist; in that I had taken no cognisance of the best weapon they have to defend their Cause.

134 This Learned man then intending to prove the real existence of Salin and Sulphurous Principles in Bodies before the action of the Fire upon them, produces Experiments nevertheless, that are made

Dr. Wil by the Fire. His sence is this: For the
lis de
serm.cap first, [viz. Salt] it is commonly known
20. p.10. that if the Salt be once washid out of the
Ashes of any Vegetable, if they be again
calcined, they will yeild no more Salt.
Moreover, if any concrete being distilled,
shall yeild a very sharp, and acid Liquor,
their Calcis [or Ashes] do remain lesse
Salt; and e contra, that is, where the
Salt is volatilized, and become a Liquor,
and doth ascend by the Alumbre, you shall
in vain seek for it in the caput mortuum:
That which vindicates the Existence of the
Principle of Sulphur in Vegetables, is this:
Take Gunneum, or any other sort of hea-
vy wood, in platters or shawlers, and putting
it into a Glass-Retort, distill it by degrees,
and it will give you, together with a somer
Liquor [which is the Saline Latex] a
blackish Oyl [which is the Sulphur part]
in a great quantity. That this was at first
in the distilled body, and not all produced
by this excurrent, appeareth from hence; be-
cause if you do proceed another way, by
which the Sulphur may be taken from the
concrete, before it be distilled, the Liquor
which cometh forth, will be almost totally
deprived of its Oyliness: Wherefore, if
you shall pour spirit of Wine upon the Shav-
ings

vinge of this wood, this menstruum will extract a great quantity of pure Rosin from it, which is the same Sulphury part; and if afterwards you take these Shavings that are left, and wash them with common water, and being dry, put them in a Retort, and distil them [as at first] you shall have but a little Oyl. But that which is more to be wondered at, and whiab doth more fully confirm this truth, is, that several Bodies which have little of Spirit, or Sulphur in them [they being for the most part found amongst Volatiles] and which chiefly consist of Salt, Earth, and Water, and are separated into these Elements by distillation, which being again mixed togesher, doth restore us the same sort of mixtus, marked with the same sort of qualities as before; **NaC** if you distil Vitriol in a reverberating Furnace, you shall have a Phlegme, almost insipid, which is the watry part: Then a very fower Liquor, or rather a fluid Salt, and in the bottom remains a Red Earth of a pleasant purple Colour. These being rightly performed, if the two distilled Liquors be poured back upon the Caput Mortuum, we shall have the same Vitriol as before, reviv'd of the same colour, taste, and almost of the same weight. The like may be

done with Nitre, Sea-salt, Salt of Tartare, and perhaps, with Alome, and other Mineral bodies, which you may proceed withal with the same success, so that those concretes that consist of fixed and stable Elements, may, like Mechanical Engins be taken to pieces, and put together again, without any prejudice. Thus far he.

135 First then, he saith, that if Salt be washed from the Ashes of a vegetable, though the Ashes be afterwards never so much calcined, yet will they yeild no more Salt; and also that those things that yeild a fower Liquor, have little or no fixt Salt in their Ashes.

136 The matter of fact I do not deny, but the inference from thence, I suppose I may. For it is no necessary consequence, that a thing was really existing in that form, in the body that yeilded it, in the which Art presents us with it, when separated from the said body. As for Example, who ever believed, that a Cole was ever really Existent, [as a Cole] in wood, any otherwise than materially; and it is sufficiently known, that the Cole is a product of the Fire, which hath dissipated some parts, of which the wood consisted and new modified the rest;

rest: From which action of the Fire, the new body of the Cole resulted: From which Cole, if it be fluxed with an Alkalizat-Salt, may be obtained a perfect, true, and totally inflammable Sulphur, no way distinguishable from common Brimstone, [as I have often proved:] Which Brimstone is a body very different from that of Salt, which the same Cole, if burnt to Ashes, will yeild us in the room of this Brimstone. And if it shall be objected, that this Brimstone is the Oyl of the Wood or Plant, which this Learned man is pleased to call the Sulphury Principle, and which he afterwards tells us may be obtained [together with an acid Saline Liquor, upon which it swimmeth] by distillation from *Guajacum*; if this be objected, I desire it may be considered, First, that the Oyl of the wood was before sent off into the Receiver, and that a much greater Stress of Fire is required to burn the wood into a Cole, then is needful to separate all its Oyl from it. And Secondly, that after it hath afforded all the Oyl which the Fire can make of it, yet then at last this Brimstone may be made out of it. And thirdly, that it be taken notice of, that it is not a sufficient

ground

ground [nay, that it is a liberty not to be allowed] to give different bodies the same denomination, because they agree in some one quality: as this Oyl, and the Sulphur do in that of Inflammability, when they differ in so many others, as is obvious to every man.

137 And as to that part of the Experiment alledged by this Learned man, in the first place, *viz.* that these Concretes, which yeild in distilling a fower Spirit, which is [saith he] their Salt volatized, and brought into the form of a Liquor, and therefore, as he saith, in vain to be sought for in their Ashes, in which very little will be found: It proveth no more but this, that according as Bodies are differently made up, so the Fire acts diversly upon their Matter: As is to be seen in Wax and Clay, the former of which the fire melts, and the last it hardens. Nor doth it appear, that this Saline Liquor was such, whilst it recided in the Concrete, and before the action of the Fire upon it; any more than it doth, that there is really, and actually residing in the body of Wheat, or Barly, before they be made into Mault, and afterwards Brewed and Fermented, a vinous, and
benigne
in-

inebriating Spirit : Which when they are so managed we find there is. But if otherwise these grains of Barley, or Wheat, shall be ground into Flower, and made into Bread, they then become wholesome Food ; of which a great quantity may be eat without procuring drunkenness, which their fermented liquors will cause. And yet from this very substance of the Grain, which affordeth two such bodies, as Drink, and Bread, by a different managing of it, may be made a liquor which is so far a Corrosive, that it will draw Tinctures, [which are solutions of the small parts of bodies] from divers Minerals, Metals, and Stones, and that many times without the help of External heat. Nor can it with more Justice be affirmed, that these Salts [whether fixt, or volatile] were really and in that form, existing in the wood, or other Concrete ; then it may be said, and believed, that there is actually in Bread-corn, the Flesh, Blood, Bones, Sinews, Hair, Nails, &c. of a man, because we see, that by the action of a humane stomach, these things are made out of Bread.

And as to what is alleged concerning the

The Oyl of Woods, And
the Oyl of *Gummarum*; it yieldeþ if it be
distilled *per se*, but if it be infusèd in Spi-
rit of Wine, it will impregnate it with a
certain *Rozin*, or *Gum*. And the wood
after this Extraction, if it be committed
to distillation, will not then afford the
same quantity of Oyl as before it would
have done: That I easily grant, but then,
it will quite destroy the inference for
which this Learned man brings it; *viz.*
That Oyl was in that form a constituent
Principle of the mixt. For there is a
vast difference betwixt *Rozin*, and Oyl,
the one being a firm body that will admit
of pulverisation, the other a fluid, and
unctuous body. And besides many other
specifical differences, [which, not to be
tedious, I purposely omit,] The *Rozin*
is a product of Nature, the Oyl, of the
Fire. For the *Rozin* or *Gum*, is to be
seen in the wood before distillation; and
is only taken up, and dissolvèd in the
Spirit of Wine, which being evaporated,
it appears again in its own form. But the
Oyl is, I grant, substantially, and materi-
ally the same with the *Rozin*, and there-
fore, that being for the greatest part, or
totally taken away, the Fire produceth
either lesse, or no Oyl: Because if the

Rozin be left in the wood, when it is committed to the Fire, the Fire doth spread abroad, break, and new alter the texture of the Rozin, and elevating, and making a new combination of its parts, it constitutes that Body which we call Oyl, which is in this case a real and new product of the Fire, and was not before formally Existing in that Body.

¶ 38. And it is plain, besides the instances before cited, that by a different managemēt of time and the same Concrete, I will cause the Fire to Exhibite very different substances from its, as for Example, take any herb, as Wormwood, Mint, &c. and having bruised them, add Yeast to them, or by any other means, procure a fermentation in the Matter, and then commit it to distillation, it will afford you an Oyl, and a vinous Spirit [which rectified, are both of them totally inflamable] but if the same herb be bruised, and suffered to lie upon the Flore some dayes, without fermenting, and if it be thus put to distillation, instead of yielding a vinous Spirit, and an Oyl, as the other did, it will afford an univous or Armoniack Spirit, which being carefully rectified, will coagulate totally into a mass of Salt, and that

The Delight of Content. And that every man knows, is very different both from an Oyl, and a vinosus Spirit: For this Salt is not only brittle, but also absolutely uninflamable.

139 And Lastly, as to what this Author instances, concerning Vitriol, Salpeter, Tartar, and Alome, yea likewise of Saline Spirits, which being poured back upon their *Caput Mortuum*, do redendigate; and return to the same bodies as they were before. The matter of Fact I allow to be true, but withal, must be allowed to say, that it proveth not what he brings in for, nor doth evince, that Salt, and Sulphur, are principles in all bodies; for'tis the effect of their seeds, that forms these bodies out of water: For Salts sometimes are the products of seeds, as I have proved from the regular figures, into which these Concrete juices do constantly shoot, as in Section the Second of this Discourse. So that it is not strange, that the smaller parts of these Saline juices, being by Fire divorced from the grosser, upon their being put together, do hastily run into, and lodge themselves in the cavities of their own bodies, from whence they were forced by the Fire. And to conclude, there are many bodies

which the Fire cannot force to confess: they are constituted so much as of two of the five modern Chymical Principles, as to instance in Gold, Talc, Silver, &c. and yet by the operation of the Alkahest, even these are at last reducible to water, of which they were made by the power of fire; and the afore-said Oyls, Salts, and Concrete juices, are to be all of them returned to water by the means prescribed in the Fourth Section of this Discourse.

140 And here I must again take notice of two things, First, that this Learned Doctors Experiments are all made by the Fire; which of it self alone I deny to be a proper Agent, to Analyze bodies, and to discover to us the truth of those principles of which they are constituted; and that for these reasons, because it doth not work uniformly upon all bodies exposed to its action; for, as I have said before, it cannot of it self separate any one of these supposed Principles, from Gold, Talc, Sand, Silver, and many other Concentrates; and yet of some other bodies it will frame, not only Oyles, Salt, Spiring Ashes, [or Earth, as he is pleased to call it] but also a Cole, Brimstone, and

DISCUSSION OF BODIES; And
and at last Glass: which three last, no
man I suppose will imagin, were really
existing, in those bodies of which they
are made; and yet are they made by the
same Agent, and from the same Subjects,
of which the Fire produced Salts, Oyls,
Ashes, &c. and therefore upon the same
ground, may as justly plead for the pre-
rogative of being the constituent princi-
ples of bodies.

14. The Second thing I would have
considered is this: That those different
Shapes and Appearances, into which the
Fire hath put the matter of any Concrete;
viz. Salts, Oyl, Ashes, Spirits, all of
them are yet so compound, that they
may be yet further returned and divided
into more simple parts, viz. into water,
which is indeed the only, and true ma-
terial Principle [deserv'dly so called] for
it is a primary, and simple body, into
which at last, all Concrete, [and even
the other Four supposed principles of this
Learned man] are reduced both by Art,
and Nature, and of which they were
made. So that we may truly affirm with
the Antient Philosophers, *καὶ τὸ μόνον οὐκανόν* One is many, and many
One.

Plato,
Hippo,
Anaxag.

59

So that though this Learned Doctor, shewed much witt in building so fair and specious a Philosophical Structure, from these five supposed principles, yet can it be no safe dwelling in it; because the Foundation is unsound.

143 I have been the fuller in discussing the Experiments brought by this great man, in favour of his five Chymical Principles; First, because indeed they have a very fair appearance, till they be thoroughly examined.

And Secondly, I would be very loath to have it thought, I would endeavour inconsiderately or upon slight grounds, to diminish the fame this ingenious man hath already gained in the World by his Writings.

And now having examined not only the *Tris Prima* [or three first Principles of the Old Chymists] but also the five Principles of our Modern Chymical Philosophers; and not being able to allow them the Title of Principles, for the reasons above alledged; I will likewise examine the Quaternary, or four Elements of the Aristoteleans, and see, whether they can plead any better Title to be allowed, and established, the Principles, or Elements, of which all Bodies are made.

H SECT.

Section the Sabbath

145 **T**HE Quadrige, or four Elements of the Peripateticks, hath for a long time gained the privilege, of being esteemed the constituent Principles of all Concretes: [which therefore are usually stilled compound - Bodies] for they say of Fire, Air, Water, and Earth, all sublunary Bodies are made, and from the divers mixtures of these, do arise all generations, corruptions, alterations, and changes, that happen to all sorts of Bodies.

146 And first for the Element of Fire, [placed by Aristotle under the Globe of the Moon, but never yet seen by any man,] certainly it is nothing else but Heat; and that we know is caused by the violent and nimble agitation of the very minute-parts of Matter: And though there be Heat, [and consequently a kind of Fire] in the Bodies of Animals, yet this is no radical Principle.

ciples, but a product of vital Fermentation. The like of which we see is produced by the fermentation of Wines in the Barrel, to whose Bung, if the flame of a Candle be held, the subtil vapours of the Wine take flame and burn; which vapours, if they be otherwayes debarred of all vent, they by their brisk motion, cause an intense heat; and sometimes burst the Vessels that contain them. And this hapneth not only to Wines, but even to water it self; for it hath been observed in long Voyages [which somewhere is, also taken notice of by Mr. Boyle] that our Thames water, being kept close stopt, assisted by the motion of the Ship, and its own secret fermentation, a Candle being brought near the vent, upon the opening of it, hath set all the Cavity of the Vessel into a flame. There is the like reason for the bursting forth of flame from wett and closely compressed Hay; as also from the Action of dissolvents upon Mettallin Bodies, &c, in which action, if the Glasses be stopt, they break with great violence: From the incoercible nature of which, we may conclude, that Fire [if there were

such an Element] can never enter, as a constituant Principle, into the Composition of Bodies; but it is rather, as *Helmont* styles it, *destructor seminum*, the destroyer of Seeds, and is a fitter Instrument to Analyze, and take Bodies in pieces, by not suffering their parts to be at rest amongst themselves, [to which purpose it is generally employed] than to constitute any. And therefore in this particular, *Paracelsus* was grossly mistaken, where he undertakes to teach us a way to separate the Element of Fire from Bodies, and afterwards pretends to make a new separation of Elements from them again. For, if we will suppose an Element of Fire, yet if that be further reducible, it must of necessity lose both the name and nature of an Element.

147 But Fire is but an Accident, [no distinct substance, or radical Principle of Bodies,] for Fire, or Heat, as I have said before, doth result from the motion, which the small parts of Matter are put into by the power of their Seeds, and Fements. For Fire cannot subsist of it self [as matter can; and doth] but necessarily requireth some

some other Body, to which it may adhere, and upon which it may Act: Which Bodies are either of a Vinous nature, as the fermented Spirits of Vegetables; or their Rozinous, and Brim-stony parts; or else of an unctuous, and fatty nature, as the Grease, and Fats of Animals; or else of a Bituminous substance, as the Sulphurs of Minerals and Mettals are. And that all this is but disguised Water, which hath got new textures by the operation of Seeds, and Ferments, I hope I have sufficiently evinced before. So that without we will much injure Truth, we must degrade Fire from being an Element or Principle, in the constituting of Bodies.

148 Nor doth *Air* enter Bodies, as an Element of which they are composed; though it be not only useful, but absolutely necessary both to Animals, and Vegetables; without which, neither of them live, or grow, and by the means of which, the Circulation and Volatization of the blood in Animals is promoted: By the help of which, also the motion of every part is performed. It also doth not only

afford a convenient help to the Vegetation of Plants, by its compressing the surface of the water, and so forcing it to ascend into the stringy Roots and Fibers of Trees and Herbs; but also by acting the part of a Separator, [for it is, contrary to the received opinion of the *Aristotelians*, a very dry and tenious Body,] it, in its passage over the surface of the water, inbibes and takes into its Cavities, store of water, which it transports to distant places [where Springs and Rivers are wanting,] and then being no longer able to suspend it, by reason of its plenitude, and weight, it returns it to the Earth, where it proves a fit nourishment for Plants, and a proper matter for all sort of Seeds to form themselves Bodies out of.

149 An other use of the Air, is to be a receptacle, to receive vapours ascending from the water, through the pores of the Earth, where finding many Cavities, these vapours rove about, till by the cold of the place, or the great extencion of them, the Seminal Principle contained in them, and by which they were specifically distinguished from

from water, is forced to desert the Body of the vapour; and so at last it returns to the Earth, in the form of the Catholike and univerſal matter, water.

150 It likewise serveth as a fit Body for the Stars to glide through, and move in; and also by its Elatery Spring, pressing equally upon all parts of this Terraqueous Globe, it keeps it firmly supported in its place; and doth the ſame Office, which I suppose Zoroſtros meaneſt by his *Prefoy*.

151 There are ſome of the Offices, and Uies, that God and Nature hath deſigned the *Expansion*, or *Firmament*, or *Etherial Air* for, but that Air we live in, and enjoy, is very far eſtranged from the nature of pure *Ether*, it being filled and defiled, with the Subtile ſteames and effluviums of all ſorts of Bodies, which are there in a conſtant Flux, by which means particles of matter diſtinctly ſigui'd, [and as yet retaining ſome ſlight touch, as I may ſay, of their ſeminate natures,] meeting together, by their action and reaſon upon each other, generate Meteors, which having ſpent themſelves, return to the boſome of the catholick matter, water.

H 4 But

152. But before I take leaue of this subject, give me leave to take notice of a great mistake in the *Aristotelians*, who affirm, that Air may be Transmuted into water, which change was never yet performed, either by Nature or Art. For, if it be to be done, by their own confession it must be performed by the means of compression, or condensation. But compression will not do the seat, as is manifest by wind-
Guns, in which the Air is forcibly compressed [into, sometimes the Twentyeth part of the space it possessed before;] yet for all that, it is so far from being Transmuted into water, that by the help of this Compression, it hath its Elastick or Springy faculty so far ad-
vanced, that it will with as much im-
petuosity and vigour throw forth a
Bullet, as Gunpowder set on fire would
do.

153. Nor will condensation serve the turn. For the moysture which we see affix it self to the walls of Cellars, and Caves, or any other subteranious pla-
ces, is not Air Transmuted, but the vapours of water lodged in the Cavi-
ties of the Air; which being compres-
sed

fed by the cold of those places, becoms drops too bigg, and heavy for the Air to keep up; and so falling down, they scule in their pristin shape of water.

154. And as Air is not Transmutabile into water, neither is water into Air. For it is manifest in distillations, that though water be converted into very subtle vapours, yet by the touch of the cold Air, it returns again into water as before, and so distils into the Receiver. And I have shewed above, that in natures Circulations, though water be so dispersed as to become a most subtle vapour, or Gas, it doth yet constantly at last return, in its own Shape, to its own fountainwater, from whence it sprang.

155. From what hath been said, it will follow, that though we do allow Air to be a very great Body, and a considerable part of the Universe, and also exceeding useful to all Bodies, we cannot yet afford it to be a material Principle, or Element, out of which any sublunary body is Constituted or Made.

156. Lastly, let us examine whether the Earth have any right to be counted

Division of Woods, and
ed an Element or Principle, of which
Bodies are constituted. For, although
the *Aristotelians* [as well as the *Chymists*]
pretend to resolve all concretes
into their first Principles by Fire, which
they think they evince, by the example
of burning wood. For, say they,
That which supplies the flame, is Fire.
That which sweats forth of the ends
of the wood, is water, and that which
ascends in smoke, is Air, but that which
remains fixed [and the Ashes] after
the Fire hath disbanded the other parts,
is Earth. Yet if we examine this ex-
periment of theirs, it will be found too
gross, to make out what they endeav-
our to illustrate by it.

157 For first, the Phlegm of the
wood is not a simple water, but con-
tains a fower Salt, and doth both need,
and will admit of a further division to
reduce it to Elementary water.

158 Nor were those parts which are
converted into flame, Fire, but Rosiny,
or [as the Chymists phrase it] Oyl,
or Sulphur parts: which I have before
shewed to be far from an Elementary
simplicity.

Neither is the smoaky, which is seen

to arise in the conflagration Air. For it will affix it self to the funnel of the Chimney in the form of Soot; after which it may be divided into Water, Oyl, Salt, and Earth, [as they call it.]

159 And the Ashes [which they are pleased to take the liberty to call Earth] every Wash-maid knows, are far enough from being so; since they are yet so compound a Body, that they contain very much of a lixiviate and fixt Salt. So that in reason it cannot be called an Element. [For Elements ought to be pure, and simple Bodies, not capable of a further reduction into different parts.]

160 And here it is necessary to remember my promise, and to take notice, that the modern Chymists, after they have washed the Salt from these Ashes, do not scruple to call it Earth, and allow it the place of one of their five Principles, of which they affirm all Bodies are compounded, and framed. But, as I declared before, so I do now again affirm, that the separating of these parts from Concrets by the force of Fire, is not a true *Analisis*, or proper way of taking Bodies to pieces; and therefore

LIX. **O**peration of **B**odies, And
therefore is no Genuine reduction of
them; but a forcing of their parts
asunder by the Fire, by which
new combinations of the parts of Mat-
ter are made; and consequently the
products of the Fire, are not to be looked
upon as Principles, which were exist-
ing in Bodies under that form, in which
the Fire presents them us.

161 Besides, were Fire an adequate
and proper Agent to dissolve the Tex-
ture of Bodies, and to present us with
their real Principles, it would act uni-
formly upon all Bodies, and exhibit
to us the same Schemes of matter, with
certainty from all alike; which it doth not
do. For [as for example] from Gold,
Silver, Talk, Diamonds, Rubies, com-
mon Stones, Sand, and many other Bo-
dies, who ever separated; not to say
the four Elements, or the five Chy-
mical Principles, but even any two of
them; and yet if we may credit that
worthy man *Helmont*, all these Bodies,
by the operation of his *Alkahest*, are
to be reduced into simple water, equal
to their own weight. So that this so-
lvent, must [from the uniformity of its
operation] be allowed to be a much
more

more fit instrument to discover what Bodies are composed of, then Fire alone can be supposed to be. And if we strictly examine the business, we shall find, that Earth doth not enter any natural Body, as a constitutive Principal thereof; but indeed Earth, or Ashes, may help to compose Artificial Bodies, such as Pots, and Glasses.

162 For all sorts of Earths are but various Coagulations of water, diversified by different Seeds, and Ferments, and are as much the products of water, as I have shewed Mineral Salts, middle Minerals, Stones, &c. to be. All which, as *Helmont* assureth us, are reducible to water, by his great Solvent, [the *Alkahest*] which possibly I have somewhat more reason to affirm, than I am willing to declare.

Earth I confess, to me appeareth to be the first product of the water, and is designed by nature as a firm foundation, [or Pedestal] to support the weight of Animals, Vegetables, and Minerals, and to afford proper Wombs for the water to deposite its seeds in. For the Earth produceth nothing of its self, but all things by the assistance of water,

160 **The Elements of Bodies.** And
ter impregnated with Seeds; which is
depositeth in its bosome.

163 And, that the Earth was the
first product of the water, is confirmed
by the Testimony of Moses, in the first
Chapter of Genesis, at the 9th. verse; where
describing the Creation of the
Earth, he says no more but this: *God
commanded the water together into one
place, and the dry Land appeared.*

164 From what hath been said, it is
I think, very clearly made out, that
Water, and Seeds, are the true and
only Principles, of which all Bodies
are made, and that neither the *Tri-
Prima* of the old Chymists, nor the
five Principles of the Chymists of our
Age, nor nor yet the four Elements of
the *Aristotelians*, can rationally be al-
lowed to be the Principles, or Ele-
ments of Bodies. So that as *Helmont*
sayes, *mit toto quaternarium Ele-
mentorum prator aquam.* The whole Do-
ctrine of the four Elements falleth to
the ground: Excepting water only.

165 Having now in some measure
made out the truth, or at least proba-
bility of these Principles I assumed to
defend, both by reason, and experiment,

it remains, that according to my promise, I strengthen these assertions by Authority. And shew this is no Novel opinion, but that it was held, and believed by the Ancientest Philosophers; Such as *Moses*, *Sanchanius*, *Machus*, *Orpheus*, *Thales*, *Pythagoras*, *Timus*, *Laotus*, *Plato*, &c. After which I shall make some short examination of the Histories of Petrification, alledged in the first Section of this Discourse, and so put an End to this Essay.

Section the Eighth.

166 **T**HAT *Moses* held water to be the First and universal Matter, will appear from what he tells us in the First chapter of his Book of the *Creation*, called *Genesis*, verse the Second, where he acquaints us, that the first material substance out of which God made this Beautiful and Orderly frame of the World, which from its Beau-

Beauty the Greeks call *stasis*, was wa-
ter. His words are these; *And the
Spirit of God moved upon the Face of the
Waters*. Where it is to be observed,
that the word which our Translation
renders *moved*, is in the Original He-
brew מָרְאֵב, *Moraeabet*, which pro-
perly signifieth not a bare motion, but
such a motion as we call Hovering, or
Incubation, as Birds use to do over
their Eggs to hatch them. By which
expression we have not only an ac-
count of the first matter out of which
the World was afterwards made, but
also of the Efficient, by which this
matter was wrought into so great a va-
riety of Bodies. For in all probabili-
ty, the sense of the Expression is, that
at that time, [*viz.* in the beginning] God
infused into the bosom of the
waters, the seeds of all those things,
which were afterwards to be made out
of the waters, setting them their con-
stant Laws, and Rules of acting [*and*
thus was Nature Created, that is, the
Order, and Rule of those things were
established, which God designed to
make:] and by the power of the words,
increase and multiply, they had a facul-
ty

ty given them, to continue themselves in the same Order, till the world shall be destroyed by Fire, [the great destroyer of Seeds,] at which time all Seminal beings shall desert their gross Bodies, and return to their first Fountain, and great exemplar God, on whom they have at this time a constant dependence. For according to the Apostle, *In him and to him, and through him, are all things; and in him we live, move, and have our being.*

167 *Sanchoniathan*, the great Phenician-Philosopher, [whom some Chronologers make contemporary with Gudea,] some part of whose Works are yet to be met with in *Philo-Biblio*, and *Endebius*, and a good account of whose Works we may also find in the writings of that Learned, and Ingenious man, Mr. *Gale*. This *Sanchoniathan*, I say, exactly corresponds with *Mosca*. For he says, In the beginning there was *Χάος*, which in the Phenician Tongue, is *אָבָהָרָה* Chauth. ^{Count of the Gentil's. part ad. p. 35} that is, Night, or Evening-Darkness. Then he further saith to this purpose, From the comming out of the spirit with the Chaos, was produced

I Mot.

Mat, which some call [i.e.] that is matter, or watery moisture. Out of this was produced the whole Seed of the Creation, and the Generation of the whole.

168 Also *Mochus*, an other Phenician-Philosopher, who continued the Philosophick History, begun by *Sophanias*, [and who is said to have written long before the Trojan War,] was also of the same opinion, as *Bachard* affirms.

169 And that *Thales* of *Miletus*, [who is held the first Philosopher that writ in *Greek*] taught that the world was made out of water, no body can be ignorant. And that, which *Sanchonias* calls *Mot*, fluid Maker, he calls *Thaum*, water. And *Tully* affirms, that *Thales* held water to be the beginning of things. And that God out of water framed all things.

170 *orbus* also is of the same judgment, and tells us, in *the Warre* he writes, of water; *Slime* was made. And *Apollonius* says, *if we consider* *what* *the* *Earth*, *of Slime* *was made*. And the *Scholiasts* give a good explication of these words; for they affirm, that the

Tally de
Natur.
Dewitt.
lib. L.
cap. 2d.

Chair, of which all things were made, was water, which coagulated it self, and became Slime, and that Slime condensed, became solid Earth.

171 Thus you see, that *Thales*'s *ὕδωρ*, or water, and the *χειρ*, *μύρτ*, and *στενος*, i. e. watery moisture, of *Sanctus*, *Minucius*, and *Moschus*, was believed and held by them to be the first Principle of all things: From which the *δύναμις* of *Pythagoras*, and *Plato*, differs not, as I will shew by and by.

172 *Pherecides* [an ancient Greek-Philosopher] who was *Pythagoras* his Master, and who we are told, was one of the first *Greeks* that held the Immortality of the Soul; though he seems to differ from *Thales*, and *Orpheus* in some things, yet agreed with them in the main, or the thing taken for granted by them all; *viz.* That water was the first Matter of all things.

173 Also *Pythagoras*, the Founder of the *Pythagorean* Sect of Philosophers, corresponds exactly in Opinion with *Thales*, concerning the Origin of the World, and its first Matter. For he positively held, that the World was made by God, and by him adorned with an

excellent Order. Hahmeywald Beatus
tyle in all its parts; and therefore he
was the first that called it *symmetria* from
symmetria, to Adorn or Beautify. Secondly,
his *base*, or first-Master, was the same
with *Sanchoniations* in *theophrastus* and
Thales, and *Orpheus*, their *base*, *viz.*
water: Agreeable all of them to *Moses*
Genesis the first, and *of moses* to *Lion*
Thirdly, *Pythagoras*, and all the Anti-
ent Philosophers before him, held, that
the Divine Providence, which they stile
viii. did inspire and influence the whole
Creation, governing, and directing all
things to their proper and peculiar Of-
fices, Functions, and Ends. And this Pro-
vidence was by them sometimes stiled
the *Soul of the World*, by which, sayth *Seranus*, they under-
stood nothing else but the *Fire*, *Spirit* or *Efficacy*, which is universally diffus-
ed in the *Symmetry* of the *Universe*,
for the *Forming*, *Nourishing*, and *Fo-*
menting all things according to their
respective natures: Which in which
Principle *Plato* calls *the *animus**, *effective* *Fire*, but this they never under-
stood, or meant to be a *material* *part*
of any *Body*, but is the same which

of all the Sages, that the Spirit of God was
in Christ. And now in the last place, I
will content to give you the mind of *Plato*,
and his conformity with *Moses*,
His judgment that always been some-
fieeming, that when he exprest the Re-
verence they had of him, did usantly
call him the Divine *Plato*. And in de-
scribing his opinion, I shall also, at this
same time give you that of *Timaeus*
Athenian, that great Philosopher, and
Disciple of *Pythagoras*, from whom
Plato borrowed much. And first
1750. First then, *Plato* tells us
that the World was made: For he
puts this question whether the World
had a beginning, or who made it. To
which he answers, when it was made.
Then at last the first matter, of which
the World, and all the Bodies in it
were made, he says thus, [in his *Timae-*
us] it is, *that* *is* *matter*, *united*,
the *Genus* or *Species* out of which
every thing is composed; and He calls it *One*,
or *first Matter*, and is indeed the same
with *Sambuchianus*, *Avicenna*, *Plotin*, *&c.*
and *Thales* and *Orpheus*'s *One*; and all
of them the same with *Moses* his *One*
and *World* as will appear by comparing
their

113 **The Origin of Moses.** And

their descriptions together. Thus first, *Moses* calls his first matter *וְאֵין בָּהָר*, without form; which *Rabbi Kimchi* calls *אֵין* [as *Fabius* tells us] which is the same word that *Plato* uses to express his first matter by; and differs little, in sound, but less in the sense from the *אֵין* of *Sanchoniathon*, which *Philo Biblius* styles *Mer*, from the *Hebrew*, and *Phoenician* *מֵד*, which signifieth Matter: Yea, *Plato* expressly calls his first Matter *διαφορι*, *somewhat without form*; just like *Moses* his *Bah*.

176 And in his *Timaeus* he tells us, that God out of this first matter [*אֵין*] commonly called *Chaos* [because disordered, and irregular] *Divideth, &布*, *as Singularity, Beauteous, Orderly, and Figureed, or Form'd the Universe*; and as *Moses* says, the Spirit of God moved upon the Face of the waters; So *Plato* affirmeth, that God made the World, *κατεργαζεν τὸν καὶ μέραν, πληρῶν τὸν κόσμον*, that is, by an *Inopportune creation, fluctuating, and not quietizing upon the matter*. And as for *Plato's* *τὸν κίνην, or Soul of the World*, we are *assured by Epicurus* *Views*, he means ^{as in} *comsuper* by it the same Spirit of God which *Moses*

Moses falsy moved upon the waters in the Beginning, and which the Psalmist calls the breath of his mouth: (Psalm 33. verse 6.) For, according to Platines Philosophy, [as well as that of Moses] God is the Executive cause, and productive Efficient of all things, and therefore he usually stiles God, ἀρχὴ, ὑπότοπος, τελετὴ, τελεοῦσα τελεία, the Supreme Fabricator, Perfector, and Essentializer of all things. And as to the manner, how all things were made, he says, οὐκίστις τοις οὐρανοῖς, Every thing was essentialized by certain Prolifick, or affirmative words, which the Greeks call ἀτύπη τελετὴ, a Spermatick, or Seedy word: Which agrees exactly both with Moses his Fiat, and with that of St. Paul, *The Worlds were framed by the word of God*; that is, Gods Fiat was the Creator of all the Seminal and Prolifick Principles of all things; and those created Seeds were τούτοις, the Efficientes, and of Earth, or Corp. mater, was the Matter of which they were all made,

Epistle to
the Heb.
cap. 11.
vers: 3.

177 These Seminal or Efficient Principles of things do contain within them-

I 4 felves

The Origin of Writing, And
 selyes certain Pictures, or Images of
 those things, which they are to make
 out of the matter, [vnde mater.] unto
 which purpose let us here what Plato
 says of his Ideas, which is to this effect;
 There are two sorts of Worlds;
 one, that hath the form of a Paradigm,
 or Exemplar, which is an intelligible
 Subject, and always the same in being;
 but the second, is the Image of the Exem-
 plar, which had a beginning, and is vi-
 sible. By his Intelligible World, Pha-
 so means the Divine Decrees, which
 are inherent in the Mind and wisdom
 of God; and these Original Idea's, he
 says, do produce a Secondary sort of
 Idea's [that is, the Seeds of things,] and
 these he makes to be the more
 immediate Delineation, or Image of
 the whole work; sometimes calling them
 Exemplar, sometimes
 an Image: His words run thus;
τον οντος τροπην οντα παραβολην παραβολην
απορητην παραβολην: making use of this
Exemplar, he frames the Idea, and
Power, that is, the Seeds of things.
 So that he makes the first, and Original Idea, [which is resident in the Divine Wisdom or Mind of God, and
 which

Plato Ti-
mæus.
fol. 49.

which Divites [call] the [Decrees] of God] to be much more Noble than the latter, or secondary late, or Seed; and to be the cause of it. And this last late, and Seed, contains the Picture of the thing to be made, and depends upon the Primary, or Original Thing, and Exemplar, which is seated in God himself.

179 Which Doctrine rightly considered, we have a satisfactory account of the cause, why the last late, viz. the Seeds of things do proceed so regularly, constantly, and amerringly in the producing their likes. For, if we consider, that the Seeds of things do depend upon their Paradigms, and that they are inherent in the Mind of God himself, who is a God of Omnes; this will appear not less abstruse than it hath hitherto done. 20 180 And though we, gods of Pride, and self-love, in our own Nature, are unwilling to afford any creature, that is not of our Species, the Priviledg of doing anything by a Principle of reason, that is, with a design, tending to the accomplishment of such an End; yet it is certain, that all creatures,

tures, even those that we count inanimate, do enjoy, upon the account of their Seminal Principles, not only Life, but even reason, in some measure: Which, wanting the use of Languages, they do nevertheless plainly declare [to heedful and inquisitive men] not only by their regular, [and consequently designed] working the parts of matter, till they have produced such a distinct sort of Body; but also by those affections which wee call Sympathy and Antipathy; and, for want of this knowledg, have hitherto referred to occult or hidden causes, the usual Sanctuary of Ignorance, by which Sympathy, and Antipathy of theirs, it is very manifest, they have hatred and love, and have a knowledg of those things, which are either pleasing, or agreeable too, or else unpleasante or hurtful to their natures. And this is not only to be observed in Beasts, and visible moving Creatures, but also in all other sorts of Creatures, which we very injuriously call Dead, or Inanimate,

181 But to return from whence I digressed, I shall in short say thus much of the *Art, or manner how* the Ideas and Seeds do work upon Matter, and form themselves Bodies; which they perform on this manner: First, by their Fermentative faculty, [or Springy power] they put the Body of the water into a peculiar sort of motion, by which they congregate those particles, which are most agreeable to their design, and consequently fittest to adhere, and stick to each other. Secondly, they break the rest into convenient shapes, and Sizes: And Thirdly, by this motion they also put these particles into commodious Postures, and Situations amongst themselves, and by these means frame themselves Bodies, exactly correspondent to their own *præconceived Figures*.

182 By this declaration of my thoughts, I hope it will plainly appear, that I am no Enemy to that rational way of explicating the *Phænomena of Nature*, used by the *Atomical, Cartesian, or Corpuscularian Philosophers*; for certainly, they do give

gives us not only a very ingenious, but also a very little account of the way, or manner how, matter is, or may be modified; to which, if they would please to add, as some do, the powerfull efficacy of Seeds upon Matter, by which indeed all the several ex: & inferior various shapes of Matter are produced; we might then hope to receive some satisfactory account of that hitherto perplexed Subject, the Generation of Natural Bodies. Which Principle if it were received, and taken into the Philosophy of our Age, it would be apt to believe it would settle many Inquiries, now daily commenced by men of Parts against each other, and oblige them to devote much more then the desire of being accounted witty & Dispersants of Truth being so desirous for a thing. This Porphyry in the Life of Pythagoras though a Heathen tells us, that he did not himself believe in any thing beyond matter, that is, Truth only can make men near to God, wrote
183. Now therefore, though rude and unguided motion, will naturally have some kinds of result, propounding

as we see the springy motion of the Air, or some more subtle Body doth form of the Water, of Rain, and Dew, round Drops, by equally Compressing it; yet because this general kind of motion doth, something; we are not from thence to conclude it doth all things. For, this were a Sophism, fitter to impose upon Fooles or Children, then upon Men of mature reason. Nor, can such kind of motion be reverable to forme such bodies, as imply a wise Councell, and curious contrivance, as, for Example, to say nothing of living Creatures, the strong and useful bodies of Metals, Minerals, and Stones, and the beautiful Branches, Flowers, and Fruits of Plants, &c. Wherefore we must, in all reason acknowledge, and confess, that there is an internal Mind, virtue, and Idea, contained in the Seeds of things, which workes rationally, [that is, of course, a Designed end,] by which Principle, the matter is put into a peculiar motion, and usefully guided, till it be changed, and formed into a body, such as the Idea was designed by God to make, who still governes these Seedy Principles. And therefore I and

Scrip-

The Delights of Absoluteness. And Scripture, we are told, *No Growth in Every Seed, its own Body.*

184. Thus then, I hope, I have proved, that I am of the same Judgment with the Antientest, and best Philosophers; viz. that there is but Two Principles of all things, Efficient, and Matter; Seeds, and Water.

185. And now having cleared the Doctrine proposed; I intend in the last place, to inquire, How those Transmutations of different Bodies into Stone, the Historyes of which you will find set down in the first Section of this discourse, were performed: upon which, I will only Touch, and so Conclude.

186. It is the Opinion of some Men, that the change of Leaves, Mossie, Wood, Leather, and other Substances, into Stone, [wrought by those Petrifying Waters, and Caves, I have mentioned in the first Section of this Essay] are no real Transmutations of those Bodies into Stone, by the Operation of a Petrifying Seed; but that they are nothing else, but the opposition of certain small Stony Particles, hid in the Water, to those Bodies immersed in them; and that by this means they become Grafted over with

with a stony Coate or Back, and so they become increased both in Bulk, and Weight, by continual addition. But if this were so, then indeed the Leaves, Wood, &c. cast into these Waters, would not be really transchanged into perfect Stony Nature, but only seemingly so.

187. Nevertheless, if we look warily into the thing, we shall have Cause to believe, that there is, not only an Aggregation of these small Stony particles, and an incrustation upon the outside of those things put into the Water, but even that the smallest Atomes of the Wood, Leather, &c. are really Petrified, in so much, that we can discern them to be no other then Stones, not only by our Eyes alone, but by them assisted with the best Microscopes. Nor if they be examined by the Fire, will they make any other Confession: For they will not burn like Wood, but calcine like Stones; and though great pieces of Wood, and Trees, will not be so soon converted into Stones, as Twiggs, Leaves, or Moss, are; yet by continuance of Time, great bulkes of Wood will be Stonifyed totally, both within, and

and without, so that by these kind of Waters, bodies are not daily Crusted over with stone, but the Woods, Leaves, &c. are really and truly changed into stone. I do not deny, but that there may be any affixing of some stony Corpuscles latent in these Waters, which may increase both the bulk and weight of those things changed by them; but that this is all, that I deny.

182. For, if so, then those Bodies thus changed, would not be altered into a true stony Nature, *per minima*, and in their smallest parts, internally, as Faus' patience shewes they are; and though the Explicating how this Change is wrought, is somewhat difficult, yet in all probability it is thus.

189. The Saxeous, or Rocky Seed contained in these Waters, [which is so fine, and subtle a Vapour, that it is Invisible, as I have before shewed all true Seedes are], doth penetrate those Bodies which come within the Sphere of its Activity, and by reason of its Subtilty, passeth through the pores of the Wood, or other Body, to be changed; by which permeating those Bodies, it doth these four things: First,

it Exhuds the Globuli Aetherai [as the Cartesians Phrase it] or the Airy Particles Lodged in their pores: Secondly, it puts the Particles of those Bodies into a new and different motion, from that they were in before; by which meanes they become broken into Figures, and Sizes, and obtain new and convenient Situations. Thirdly it intangleth and Lodgeth it self intimately amongst the smallest parts of those Bodies; by which meanes their parts being drawn closer together, they obtain a greater Weight and Solidity: And lastly, it Acts as a Ferment, and by reason of its Contiguity, and Touch with every small part of the matter it doth, as Leaven useth to do, [though mixed with a much greater quantity of Dough, then it self] Convert the whole into its own Nature. So also this Stonifying Seed, by its operating Ferment, doth transchange every particle of the matter it is joyned unto, into perfect Stone; according to its Idea or Image, Connatural with it self.

190. As to those Conversions of Animals into Stone, related in History, the 13, 15, 16, and 17, of the first

Section of this Essay; they also are wrought by the same powerful Operations of a petrissent Seed or vapour; and by the same Circumstances, and Contrivances: which sheweth, that the Strength and Power of a Petrifying Seed is above, and beyond all other: For, other sorts of Seeds do require, that the subject matter be reduced into a sequacious juice, or obedient Liquor, and Consequently doth require, that the Figure, and Shape of the precedent Concrete be destroyed, or else they cannot Act. But the Petrifying Seed, the Human, or other Living Creatures Figure being still intire, without any intervening putrefaction, or dissolution of the matter, doth transchange [*Totum per Totum*] the whole, throughout the whole; that is, as well the Bones, as the Blood, and Skin: So that here is not an incrustation of the Stony matter upon the External parts, [only] but a real change, intrinsically, and throughout, of the Bony, Fleshy, and Sinnewy parts of the Animal into a stony Substance.

191. By the same operations Water it self is converted into Stone, [*viz.* by

by, the power of Petrifying Seeds] as we may see by the 7, 8, 9, 10, 11, 12, and Fourteenth History of the first Section: As also doth appear by the Relation of those that have seen those Famous Grotts in *France*, called, *Les Caves Goutieres*, where the Drops falling from the top of the Cave, doth [even in its falling] coagulate before your eyes into little Stones. Now this Transmutation of Water into Stone, by a Petrifying Seed, is not only much more usual, than the change of other Substances is, but also much Easier: For Water is a Primary, simple, liquid, tremulous Body, consisting of very minute parts, already in Motion, and therefore readily Obeying the Command of all sorts of Seeds.

192. Nature is uniforme in her manner of producing Bodies, and therefore, as I have demonstrated in the body of this Discourse, as she usually, nay constantly produceth, both Animals, Vegetables, and Metals, from liquid Principles, viz, Water. So doth she most commonly Stones, which before their becomming such hard Bodies, were at sometime in *Principiis Solutis*,

Selusis, that is, their matter was in a loose, open, and fluid Forme: And as I have shewed, the Spiritual Seeds of Vegetables, do assimilate, and change Water, into Mint, Rosemary, &c. According to the diverse Ideas, and characters of their peculiar Kindes; so also the Stony Seeds, do form themselves Bodies out of Water; and these of very different Figures, Compaction, and Colours; and this is done sometimes suddenly, sometimes slowly, and by length of time: Now, the difference of compaction, and hardness, that we find in Stones, as also their sudden or slow Coagulation, depends chiefly upon the plenty, or paucity of the stony Seed, or Spirit, in respect to the quantity of the matter to be wrought upon, and changed by it. But the difference of the Figure, is chiefly to be referred to the peculiar Nature of the Seed, and its Idea; [as we see in Crystals, and other Stones, which have a determinate Figure:] and sometimes it is to be referred to the vessel, or place, containing the Water, or other Liquor, before its conversion into Stone. And for the Colour, that is also chiefly caused

fed by the operation of the peculiar sort of stony Seeds, which in its working upon the Water, hath given it a determinate Tektur, and superficies; by which it reflects and modifies the Light, after a peculiar manner. But sometimes it is to be referred also to the Waters being impregnated with the Tinctures of some Mineral or Mettallin Bodies, before its coagulation. As Granets contain the Tincture of Iron in them; and therefore are drawn by the Load-stones.

But to put it out of all doubt, that Stones were at first Water, [or at least, some Liquid Matter] I will Cite a passage or two out of the Works of my often mentioned, Honourable Friend, Mr. Boyle. His words are these: *And here I will confess further, that I have often asked myself, whether or no not only Consistent Bodies, but some of the most solid ones in the World, may not have been Fluid in the form, either of Steemes, or Liquors, before their Coalition and their Concretion either into Stones, or other Mineral Bodies.* And then speaking of the Opinion of some Men, who will have it, that Stones, and Metals, [were

Boyl in
his Essay
of Ferm.
p. 281.

The Origin of Bodies, And

indeed Created at the beginning of the World by God, but that since they are neither Made, nor do Grow, and increase: He further saies [viz. that they were once in a fluid forme] thus: Of this, besides what we elsewhere deliver Concerning it, we shall anon have Occasion to mention some Proofs; and therefore we shall now only mention two or three instances: the first whereof shall be, that we saw, among the rarities of a Person, exceedingly Curious of them, a Stone flat on the outside, on one of whose internal surfaces was most Lively Ingraven, the Figure of a small Fish, with all the Finns, Scales, &c. which was affirm'd to have been inclosed in the Body of that Stone, and to have been accidentally discovered, when the Stone chancing to receive a rude Knock upon its Edge, split a funder. I Remember also that a while since a House-keeper of mine in the Countrey informed me, that whilst a little before, he Caused in my absence one of my Walls to be repaired, the Mason, I was wont to employ, Casually breaking a Stone, to make use of it about the Building, found in it [to his Wonder] a peece of Wood, that seemed part

of

of the branch of some Tree, and Consequ-
ently was afterwards inclosed with that
solid Case wherein he found it. This Ex-
ample seems to me a more cogent Proof
of the increase of Stones, than some o-
thers, that Eminent Naturalists much
rely on, for reasons discoursed of in an o-
ther place.

193. And again, He tells us in the
same place, that He hath seen several
large Stones, such as they make Statues
of, that when they were sawed, and
broken, had Cavities in them, which
contained Metals, and other substan-
ces: And I my self have observed peb-
bles inclosed in great free Stones. And
it is commonly known, that Spiders
and Toads have been found upon the
breaking of great Stones, inclosed in
their innermost substance.

194. And now I have shewed you,
how agreeable I am with this Learned
Person in this Doctrine concerning the
matter, and growth of Stones; I will al-
so shew you his Opinion, as to their Effi-
cient: for he says, *I know that not on-
ly profess Chymists, but other persons who
are deservedly ranked amongst the Modern
Philosophers, do with much Confidence*

Essay of
Ferm.
p. 275.

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entirely ascribe the induration, and es-
pecially the Lapidescence of Bodies, to
a certaine secret internal principal, by
some of them called a Forme, and by o-
thers a Petrifying Seed, larking for the
most part in some Liquid Vehicle: And
for my part, having had the opportunity
to be in a place, where I could in a dry
Mould, and a very elevated peice of
Ground, cause to be digged out several Chri-
stalline Bodies, whose smooth sides, and
Angles, were as Exquisitely figured, as if
they had bin wrought by a skillful Artist
at cutting of precious Stones; and ha-
ving also had the opportunity to consider di-
vers exactly or regularly shaped Stones,
and other Minerals, some digged out of
the Earth by my Friends, and some yet
growing upon Stones, newly Torn from
the Rocks, I am very forward to grant
that [as I elsewhere intimate] it is a
Plastick Principal implanted by the most
wise Creator, in certain parcels of mat-
ter, that doth produce in such Concre-
tions, as well the hard Consistence, as the
determinate Figure. Thus far He; Then
which, what more consonant to the Do-
ctrine I have asserted in this Discourse?

195. Conclude we then [and I hope

at last upon probable Grounds] since we have not only the before cited Authorities, both of the best Antient, and Modern Philosophers; and also are taught by the experiments, and Manual Operations laid down in this Discourse, which shew us the reduction of all bodies ultimately into Water, and their Nourishment from thence; as also from the inaptitude of at least two of the four Aristotelian Elements [viz. Fire, and Aire] to concur to the Constituting of Bodies; and likewise from the Compound Nature, of two of the Old Chymical Principles, viz. Sulphur and Salt: and from the same compound Nature of four of our moderne Chymists Principles, viz. Oyle, Salt, Spirit, Earth, which all of them are further reducible into Water, and therefore not to be allowed for Principles; as I have before demonstrated: Let us then, I say, conclude in, and acknowledge the truth of the Moysaick, Platonick, and Helmontian Doctrine.

195. That is, that all Bodies consist but of two Parts, or Principles, Matter, and Seed; that their Universal Matter is Water: That the Seedes of things do

from

The Origin of Bodies, And

from this Matter, [by the help of Fermentation] alter, break, and new compose the Particles of which it Consists, till they have formed a Body, Exactly Corresponding to the Images, or Idea's contained in themselves: Also that the true Seedes, of all things, are of a very subtle Nature, and Invisible, and are secundary Idea's and Images; and that they are Connexed to, and depend upon their Primary Idea's, and Exemplars, which are Inherent and resident in God himself: And that for that reason they Act with Designe, and to a purposed End, which they constantly, and regularly Accomplish, and this is somewhat Analogous to reason in them. Lastly, that Nature, or the Law of Kind, is uniforme in its productions thus far, that it makes all Bodies out of Water, by the power of invisible Seedes; so that the Matter of all Bodies is Identically the same. And that they are all of them reducible into the same Matter at Last: But that their Seeds are various, and therefore produce different Effects upon the same Matter: yet do they all agree in this, viz. That they are all invisible Beings, and all of them have a dependance upon

Nature of Petrification.

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on their Exemplars, which are the Decrees of God, and are constantly inherent in him.

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Book of Psalms

out their Examples, which the De-
cree of God, and the Confession of
Truth in Jesus.

THE BOOK OF PSALMS

MINI.

THE BOOK OF PSALMS

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